Occupational HAZARDS

THERE'S PROFIT IN PREVENTION

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MARCH
1947

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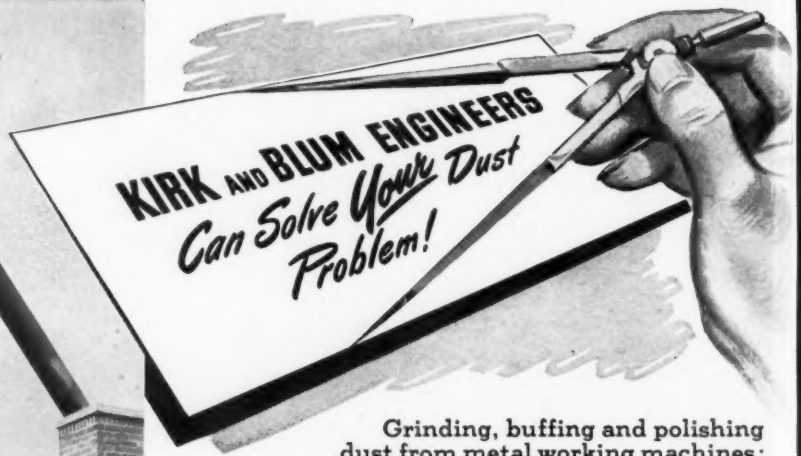
APR 13 194

IN THIS ISSUE: TEETH IN YOUR HEALTH PROGRAM . . . FIT GOGGLES TO THE HAZARD . . . CHEMICAL EXPOSURES . . . THE COMPENSATION PROBLEM

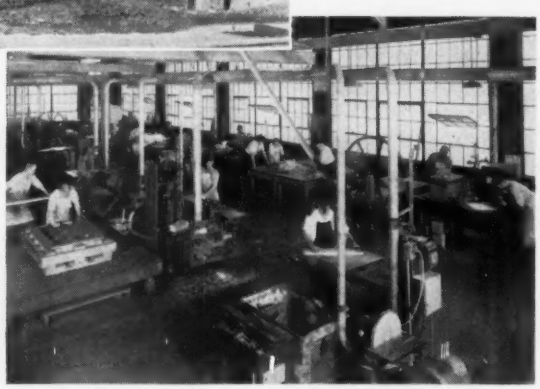


Grinding, buffing and polishing dust from metal working machines; sawdust and shavings from woodworking machines; dust and fumes from foundry shakeouts; fumes from pickling and plating tanks—all call for specialized knowledge and experience to assure efficient removal.

For forty years, Kirk & Blum has specialized in the planning and designing of efficient, dependable systems for the removal of dust and fumes. Each Kirk & Blum system is carefully planned and correctly engineered to meet the special conditions encountered on each individual job—and guaranteed to provide maximum efficiency at minimum operating expense.

The broad experience of Kirk & Blum engineers in solving dust and fume control problems for all types of industries is available to you for the asking. Why not take advantage of this specialized engineering service? A discussion of your problem puts you under no obligation. Write today to THE KIRK & BLUM MFG. CO., 2802 Spring Grove Ave., Cincinnati 25, Ohio.

Kirk & Blum Dust Collecting System installed in the plant of The Cooper Bessemer Corp., Mt. Vernon, Ohio



Removes sawdust and shavings from pattern shop

Removes metal dust from tool grinding room

Kirk & Blum Engineers . . .

1. determine the pipe sizes and the correct location and kind of hood opening
2. select the right type of equipment to produce the desired results
3. design the equipment to provide for proper clearance, safety, and visibility
4. supervise the actual installation which is carefully scheduled to assure minimum interference with manufacturing operations

ENGINEERING SPECIALISTS IN DUST AND FUME CONTROL

KIRK AND BLUM

APR - 3 1947

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PRODUCTION SCHEDULES CAN SLIP ON SOAP!

SOAP, TREACHEROUS SOAP can help upset the best-laid plans of management by slowing up high-stepping work schedules to a point where it hurts.

Not by bodily tripping up your workers, but through the impaired manual efficiency caused by a hand cleanser with an overdose of skin-injuring alkali.

With Lan-O-Kleen this isn't so! Lan-O-Kleen, a powdered soap, contains no harsh ingredients to harm the skin. Wherever soil and dirt dig deepest, Lan-O-Kleen loosens them with gentle thoroughness. Does it with the sponge-like action of its corn-meal granules—not by grinding attack on the skin surfaces.

Super-fatted with a generous degree of lanolin, Lan-O-Kleen gives extra protection against the skin drying out—leaving hands with a pliable, ready-to-work feeling.

Make Lan-O-Kleen a safety stand-by at workers' washstands. Consult one of over 350 West trained representatives throughout the country.

WEST DISINFECTING Company

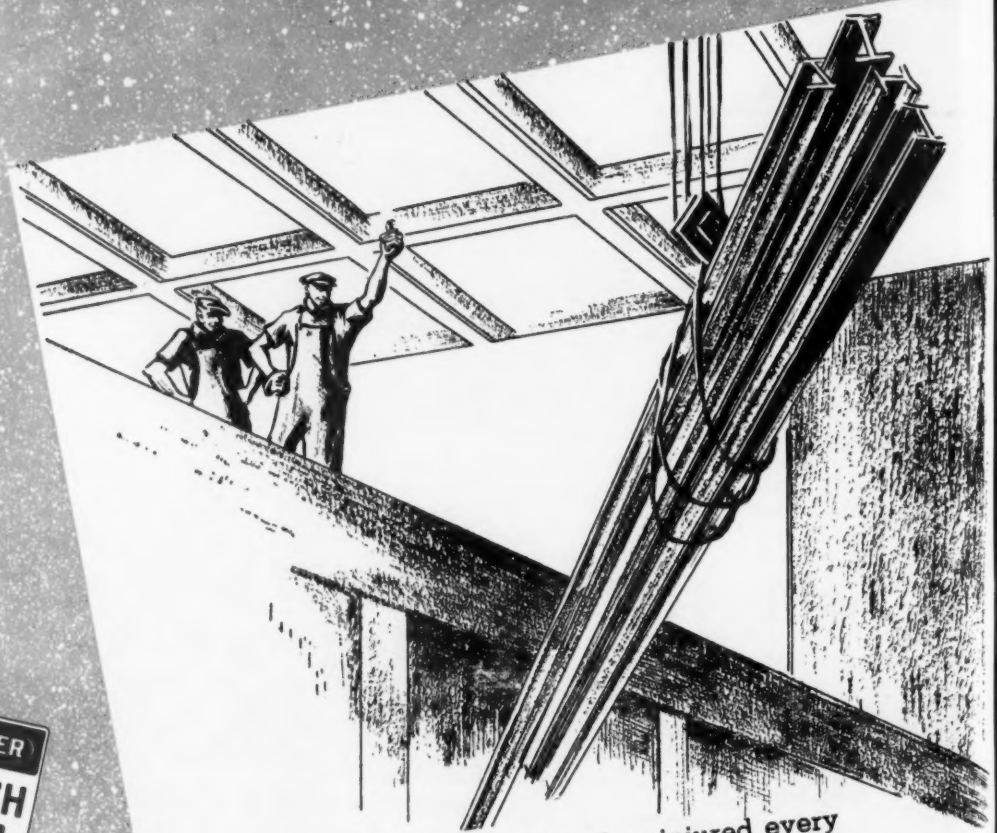
Products That Promote Sanitation

42-16 West Street, Long Island City 1, New York, N. Y.

BRANCHES IN PRINCIPAL CITIES OF UNITED STATES AND CANADA

CLEANSING DISINFECTANTS • INSECTICIDES • KOTEX VENDING MACHINES
PAPER TOWELS • AUTOMATIC DEODORIZING APPLIANCES • LIQUID SOAPS

FALLING HAZARD SIGNS



Hundreds of workers are killed or injured every year by falling . . . or by objects falling on them. People fall over things carelessly left in the way; fall down stairs, off ladders and in other ways. Many are hurt by objects falling on them from cranes, shelves, scaffolds . . . it's a long list of hazardous situations.

STONEHOUSE SIGNS

FOR ACCIDENT PREVENTION

Help to reduce Falling hazards. Many such signs are shown in Stonehouse Catalog No. 8. It's Free on request.

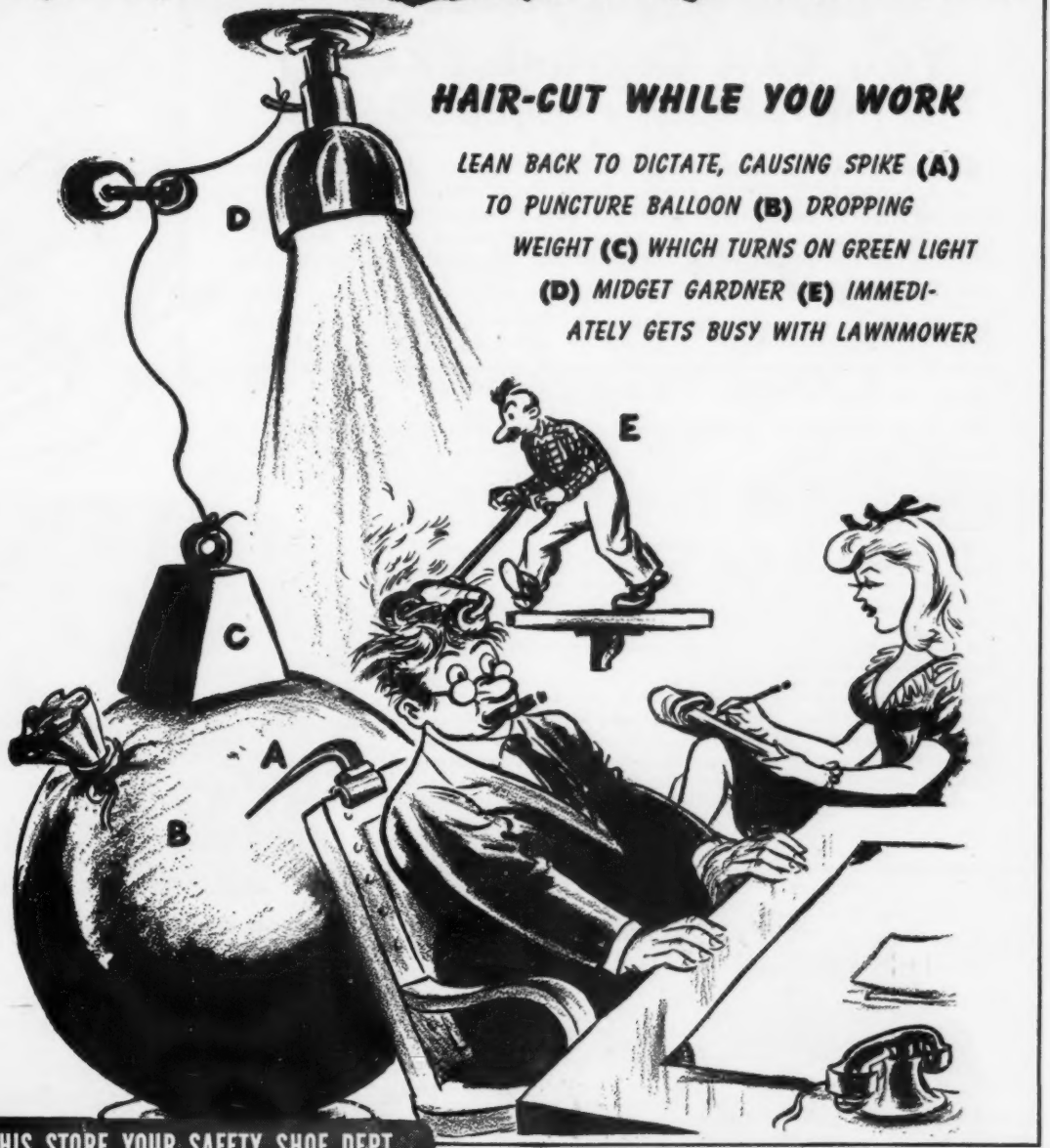
"Signs since 1863"

Stonehouse SIGNS, INC.
MANUFACTURERS

842 LARIMER ST. DENVER 4, COLO.

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

One Way To Do It! — by Rube Goldberg


HAIR-CUT WHILE YOU WORK
LEAN BACK TO DICTATE, CAUSING SPIKE (A) TO PUNCTURE BALLOON (B) DROPPING WEIGHT (C) WHICH TURNS ON GREEN LIGHT (D) MIDGET GARDNER (E) IMMEDIATELY GETS BUSY WITH LAWNMOWER
A
B
C
D
E

MAKE THIS STORE YOUR SAFETY SHOE DEPT.

More than 500 stores in over 300 cities.

SAFETY SHOE DIVISION
25 W. 43 ST., NEW YORK 18, N. Y.

ONE WAY to approach the foot safety problem in your plant is to provide Safety Shoes of some brand that your men don't know—or perhaps don't like.

THE EASY WAY is to select Thom McAns, "the Safety Shoes that workers wear WILLINGLY"—because they already know and trust the Thom McAn name.*

THE EASIEST WAY OF ALL—"LET Thom DO IT"
Let us stock our Safety Shoes for you in our own Thom McAn retail stores, fit them with our own trained fitters, without cost or obligation on your part. You, freed of "shoe store problems," can concentrate on more important things, make yourself a more valuable man. Proof? Details? Write for them—today.

*MORE MEN buy their shoes from Thom McAn than from ANY OTHER shoe store organization IN AMERICA

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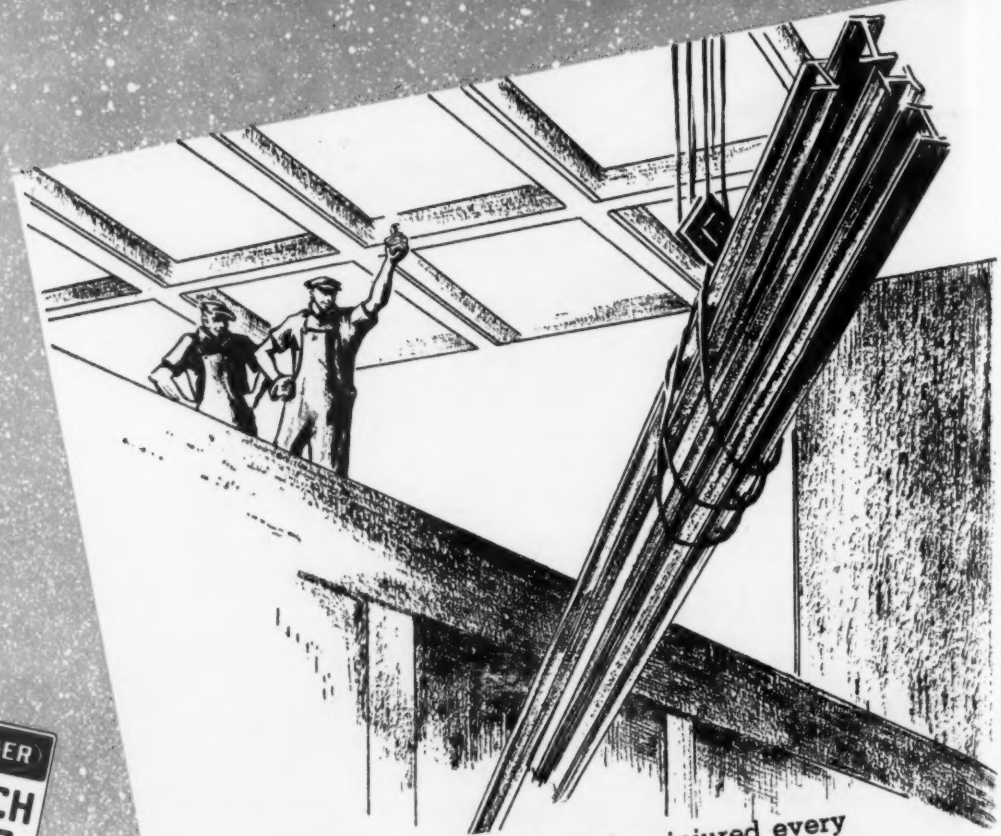

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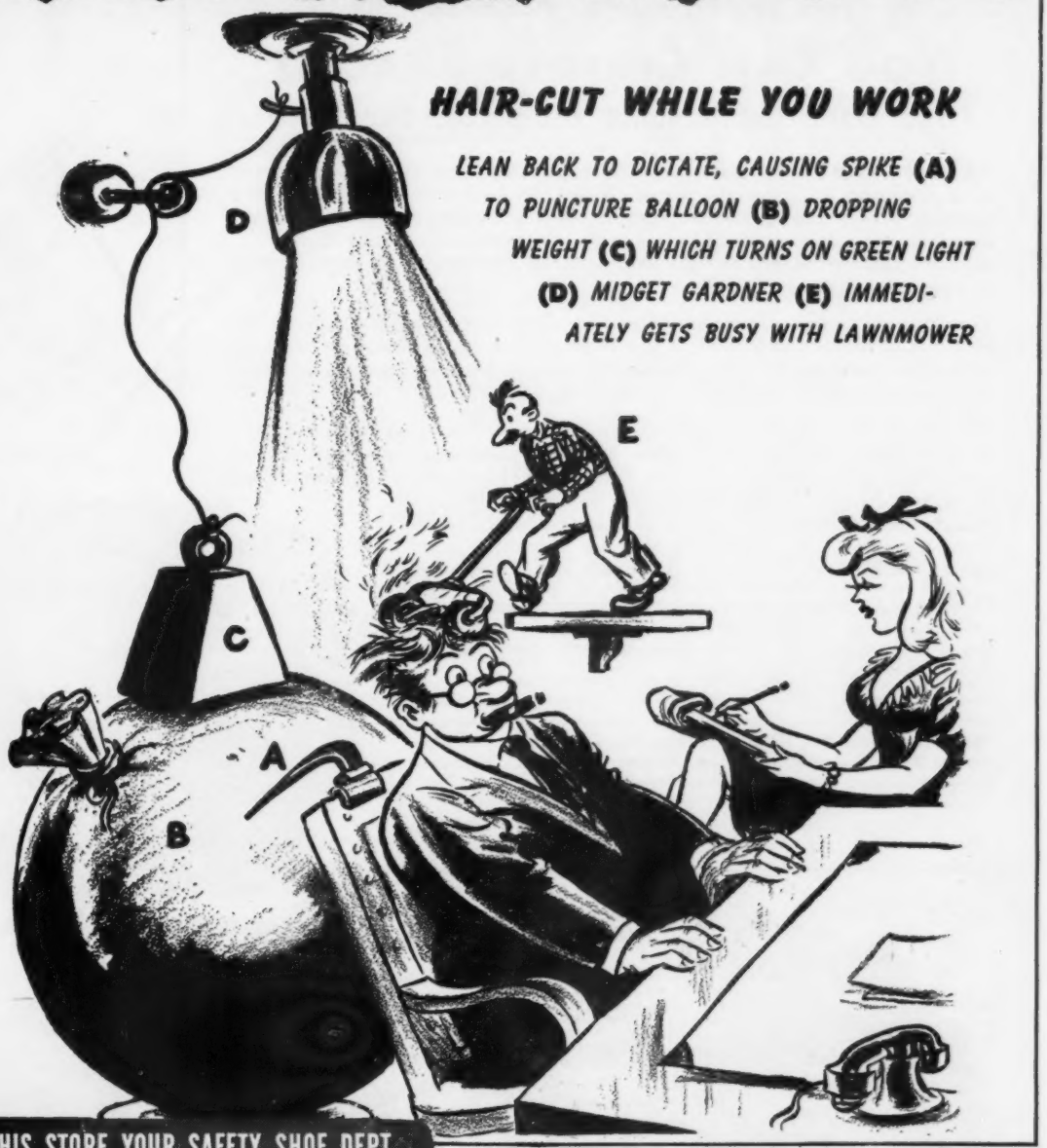

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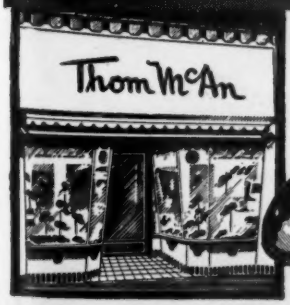

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*MORE MEN buy their shoes from **Thom McAn** than from **ANY OTHER** shoe store organization **IN AMERICA**

From the Complete *Finnell* Line

YOU CAN CHOOSE *EXACTLY*

The Floor-Maintenance Equipment You Need

That is because *Finnell* makes machines for *every* type of floor care and in sizes designed to fit specific needs. From the complete *Finnell* line, it is possible for you to choose equipment that provides the greatest brush coverage consistent with the area and arrangement of your floors . . . whether the equipment is for wet scrubbing, dry scrubbing, dry cleaning, waxing, or polishing.

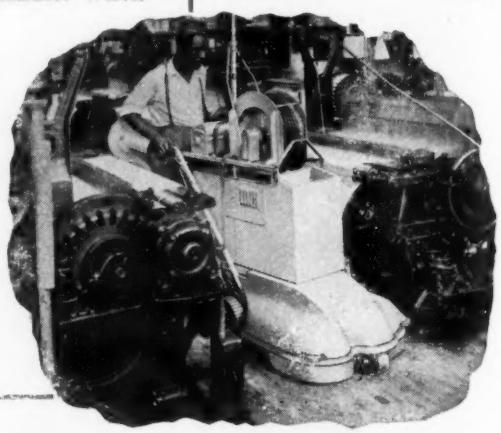
The *Finnell* Scrubber-Vacuum shown at right (one of several) speeds the cleaning of large-area floors. It is self-propelled and a complete cleaning unit *all in one.* Applies the cleanser, scrubs, rinses if required, and picks up. Has a cleaning capacity up to 8,750 sq. ft. per hour!

The Motor-Weighted *Finnell* shown below at left is equipped with a *Feather-Touch* Safety Switch that provides *complete* automatic switch control. Switch works with either hand from either side of handle. When handle is released, machine stops. Self-propelled . . . glides over floor with virtually effortless guidance. Five sizes: 11, 13, 15, 18, and 21-inch brush diameter. Inset shows machine with *Finnell* Dispenser for hot waxing.

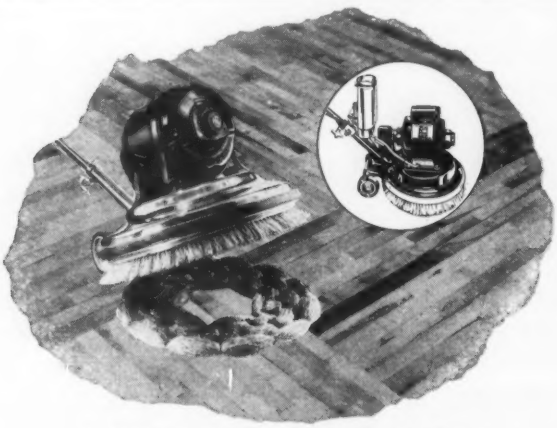
The *Finnell* Dry Scrubber shown below at right cleans grease-caked floors in *one-tenth* the man-hour time required when hand-spudding. Has self-sharpening brush feature. Adaptable to wet scrubbing, steel-wooling, waxing, polishing.

Finnell also makes a full line of *Cleansers, Sealers,* and *Waxes,* as well as *Steel-Wool Pads, Mop Trucks,* and other accessory equipment. For consultation, free floor survey, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 3503 East Street, Elkhart, Indiana. Canadian Office: Ottawa, Ontario.

Three of MORE THAN A SCORE . . . of Models and Sizes . . . Each Designed to Meet Specific Needs



A *Finnell* Scrubber-Vacuum for Cleaning Large-Area Floors.



A Motor-Weighted *Finnell* for Dry Cleaning, Polishing, Waxing. Also Wet Scrubs, Sands, Grinds.

A *Finnell* Dry Scrubber for Cleaning Grease-Caked Floors.

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

Occupational HAZARDS

VOLUME 9 • NO. 5

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CONTENTS FOR MARCH, 1947

COVER: When an employee knows that his company is all-out for a type of eye-protection that goes right down to individual jobs, the mandatory use of safety glasses meets with easy acceptance. Obviously, this Weirton Steel worker must think so. Fortunately he was covered for accident contingencies by specifically fit goggles, planned to minimize hazards of his particular job.

"THERE'S PROFIT IN PREVENTION"

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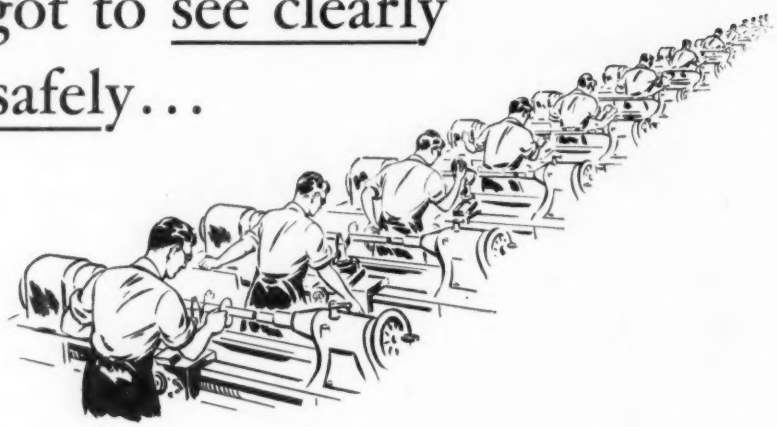
They've got to see clearly to work safely...



● A complete eye safety program must include *protection* and *correction.* Protection from flying particles, dust, and fumes, of course. But industrial studies show that at least half of all workers need eyesight correction. No worker who cannot see clearly can work safely (or efficiently). Industrial eyewear, incorporating correction professionally prescribed to the requirements of every job, will improve your safety record —and increase productivity. Your Bausch & Lomb distributor offers prescription service on industrial eyewear—*protection* and *correction* for your workers.

SAFETY FACT-FINDING CASE HISTORY...

ABOVE Ortho-Rater Visual Standards

BELOW Ortho-Rater Visual Standards

ACCIDENT-PRONE WORKERS *are identified by the Bausch & Lomb Industrial Vision Service with the Ortho-Rater fact-finding system. From medical records in one plant, 42 workers with high accident-frequency records were selected for study. Of the 42 workers, only 11 met Ortho-Rater visual performance standards; 31 failed to meet the standards; a basis was set for selecting accident-free workers for hazardous jobs. The B&L Industrial Vision Service also contributes to increased production, improved quality, reduced labor turnover, and lower training costs.*

Write for descriptive bulletin A-591.

BAUSCH & LOMB

OPTICAL COMPANY ROCHESTER 2, N.Y.

PROTECTION WHERE NEEDED

H742-1. Men's Black Calf Blucher Oxford, Oak Leather Sole, Half Rubber Heel.

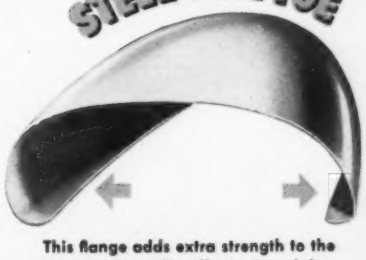
..Insure Workers Feet In Sure Protection with HY-TEST Safety Shoes

It's elementary. Even schoolboys know you've gotta' have protection where needed so blows don't hurt. Hy-Test Safety Shoes use that principle to sidetrack accidents. The *Anchor-Flange** Steel Box Toe has book learnin' back of it. Physicists figured out how to make it stand up under greater pressures, harder impacts. It's saved workers from a lot of punishment. Hy-Test Safety Shoes are comfortable and long wearing . . . made of all leather in vital parts. Sizes are 5 to 15 widths AA to EEE.

THE WORLD'S LARGEST SELLING SAFETY SHOE

HY-TEST Safety Shoes

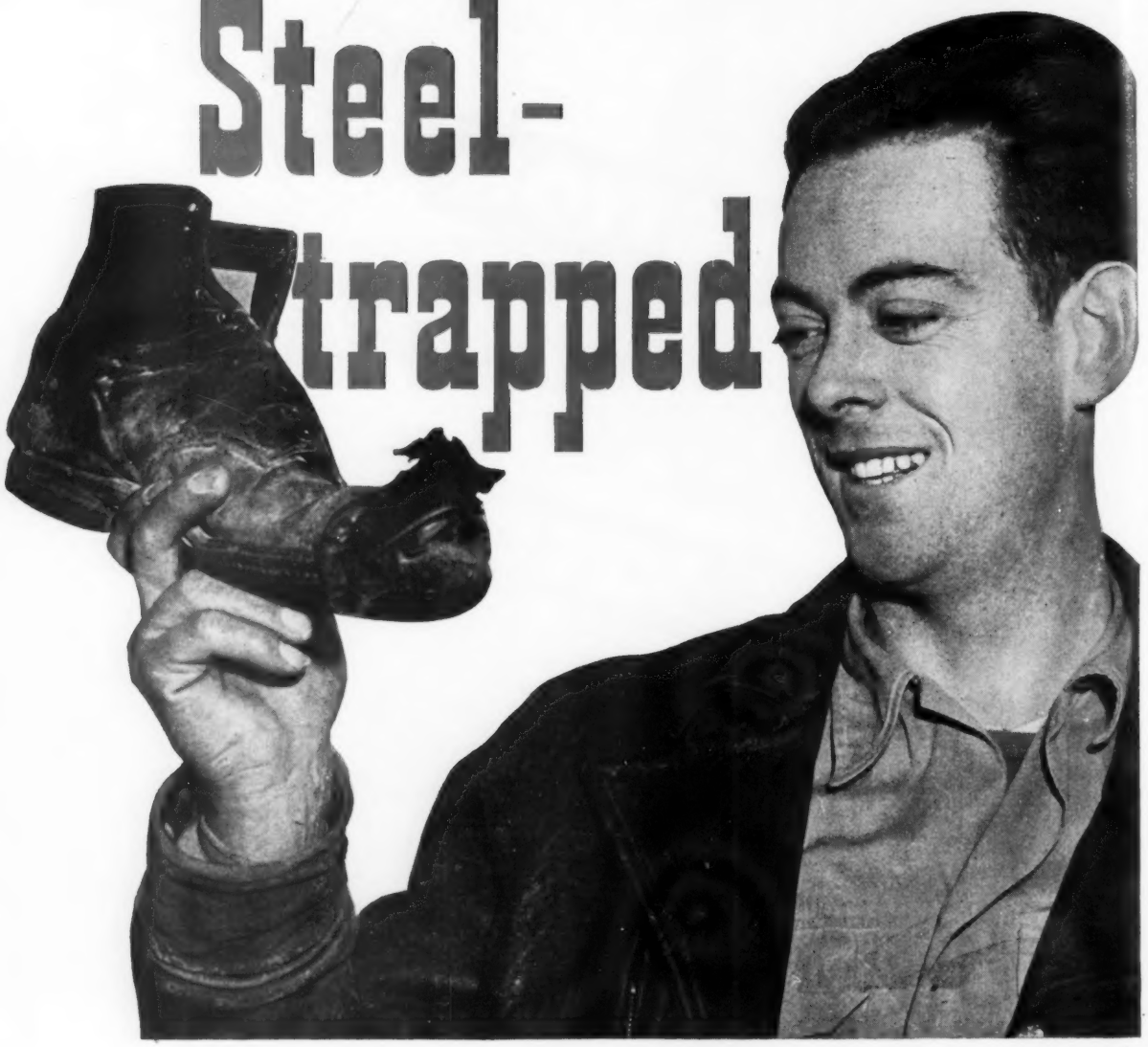
*ANCHOR FLANGE STEEL BOX TOE



This flange adds extra strength to the steel arch's sidewall. Anchored between insole and outsole, it also serves to resist shifting, tilting and cutting through outsole under impact.

HY-TEST DIVISION • INTERNATIONAL SHOE COMPANY • ST. LOUIS 3, MO. • EASTERN OFFICE • MANCHESTER, N. H.

Steel-trapped



THIS LEHIGH SAFETY SHOE was caught in a spur-track switch as a heavy transfer-car, loaded with brick, moved by! The pressure of the rolling car wheel squeezed the Lockrim* steel toe box like a ripe banana. But the trackman's toes weren't even bruised. It's no news when safety shoes save men's toes. But this case is typical of how Lehigh's "Extra Margin of Safety" helps to compensate for the mis-steps you can't foresee. Your Lehigh representative can help cut foot-and-toe injuries to an irreducible minimum. Write us to have him call.

*T. M. REG

MAGICIAN TO INDUSTRY

FREE—Send for a copy of this astonishing booklet telling how Mr. Clyde R. Powell has helped reduce accident rates up to 50%. Mr. Powell, nationally famous lecturer and accomplished hypnotist is available FREE for your safety meetings. Write for available dates.

LEHIGH ALLENTOWN, PA.

SAFETY SHOE COMPANY

WESTERN OFFICE: 12th AND SPRUCE, ST. LOUIS 2 MO.

YOU CAN CONTROL

TOXIC CHEMICAL EXPOSURES

By Frederick W. Sands, Industrial Hygienist, U. S. Rubber Company

THE control of exposures to toxic industrial chemicals can largely be brought about through three plant practices. (1) a periodic study of plant records of raw materials received; (2) reviewing all process changes before changes are made, for possible health exposures; (3) study of the possible production of toxic chemicals through reaction of raw materials.

These problems are not the work of one person alone. Many departments are involved and all have an interest in some phase of the problem. Close cooperation is needed between the safety director, the medical department, the control department, research and development and sales and production, if these control procedures are to be successful in prevention of serious health consequences.

In nearly every efficiently organized plant, one man is usually assigned the task of keeping records of raw materials received, the departments to which these chemicals are routed, the dates, etc. In his hands lies the key to the discovery of potentially hazardous conditions. From frequent examination of his records, it is possible to learn early of the introduction of hazardous chemicals into the plant.

Proper use of these records means a large measure of control of chemical hazards *at the source,* in contrast with the casual and rather haphazard method of searching through the plant for these conditions. It means greater accuracy and less possibility of missing or skipping dangerous chemicals. If the raw material control man is aware of the health and safety aspects of his work he undoubtedly cooperates in making this information available to the proper people.

Control of chemicals already introduced into the plant operations, however, is not in itself enough, since no provision is made for the study of *new* chemicals introduced as a result of process changes. This is best handled through close contact with the research and development staffs. Through cooperation and emphasis on the health aspects of process changes, much can be done to eliminate or reduce a potential hazard even before it has been introduced into the plant.

Another aspect of the control of chemical hazards is the matter of reaction products in chemical processes. Scrutinizing the lists of raw materials does not reveal the nature of the reaction of these chemicals. The records may show that a department is receiving phosphorous trichloride and phenol but they do not indicate that the evolution of hydrogen chloride gas is a reaction of these chemicals in process. Where such reactions take place, the operations should be studied carefully, by some person designated for that purpose.

Written standard procedures have been prepared at some of our plants, covering these situations. Provisions established in these procedures are:

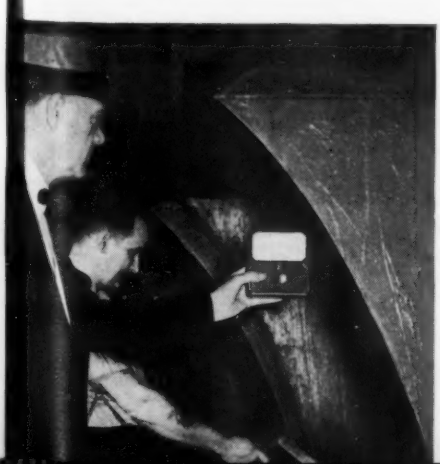
1. All new solvents or new chemicals, or raw materials are to be checked against available literature on toxicology to provide a background for the possible physiological effects produced through use of these materials.

(a) All purchase orders for materials not previously used in the plant are to be examined by a designated person.

2. Hazardous materials are allowed to come into the plant only if the hazard can be controlled within satisfactory limits, and are to be distributed to and used only in areas subject to the necessary controls.

3. Where necessary, procedures will be established in cooperation with the safety supervisor, and plant physician and chemical department, under which the material is to be used, the departments to which issuance is approved, etc.

4. A quarterly inventory of solvents and chemicals is to be prepared by the designated person showing areas in which each is used.



Air velocity at the face of an exhausted hood is measured as protection against toxic exposures in the manufacturing process of latex.

Presence of toxic chemicals, even in small amounts, is determined by sampling with an electrostatic precipitator.

Visual Aids To Stop Tool Injuries

BY LYNE S. METCALFE

THE development of industrial safety programs, especially during war production, included visual systems and tended to combine the teaching of tool and machine operation with safety practices applying directly to the equipment under study. Such films have been provided for basic training in wood working, combining safe practices for the various wood working tools and machinery, and now a series of visuals by Jam Handy, "Safe Practices In Metal Working" are available.

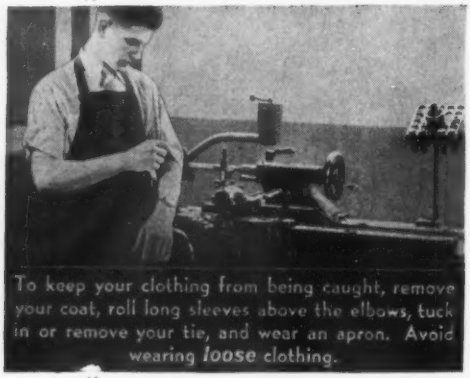
This series combines safety points with the "how-it-works" and "how-to-work-it" instruction—eleven subjects in all. The series deals with the principles of engine lathe operation, adapted to vocational or trade school as well as industrial plant utility. The material in each film (discussional type) is divided into several lessons, each with a review and discussion questions to serve as a guide for group discussion. Each lesson may be shown in the average class or group period.

Subjects are:

1. Kinds, Parts, Safety
2. Dressing Safety
3. Lathe controls
4. Turning Tools
5. Chucks, Chucking Work
6. Centers, Setting Tools, Facing
7. Center Holes, Mounting Work, Facing Between Centers
8. Turning Between Centers, Shouldering
9. Recessing, Champfering, Filing
10. Taper Turning, Taper Turning With a Compound Rest
11. Collets, Faceplates, Rests

As a general rule, visuals of this type are integrated with talks, discussions, quiz periods, text book study and shop demonstration. The main purpose of the films is to provide the foreman or other instructor with a planned procedure for orderly instruction, and to acquaint the learner with the nature of the engine lathe, purpose, main parts or functions before the equipment itself is confronted.

Top Lever
The lathe has the controls for shifting gears — sliding gear, tumbler lever, and top lever. The plate is attached to the gearbox.
Plate
Sliding Gear
Tumbler Lever


To keep your clothing from being caught, remove your coat, roll long sleeves above the elbows, tuck in or remove your tie, and wear an apron. Avoid wearing *loose* clothing.

3. ***Check for trueness with a toolholder.*** First place a toolholder backwards and upside down in the tool post with the back end against the work. Tighten the screw with your fingers.

The cutting tool is mounted on the lathe carriage which is moved by operating various controls. The carriage controls are about the same on all lathes.

There's a *Safer Way*

Safety Illustrated

NUMBER 9

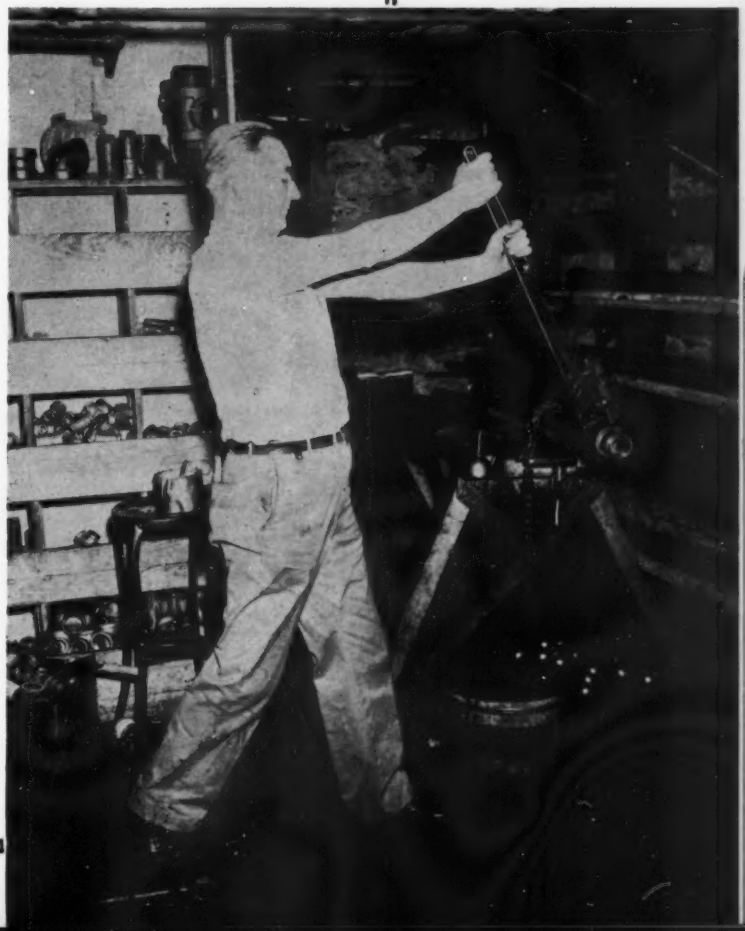
Here are new pictures for your photographic safety manual. Clip and save.

●

It took just a second for this man to slip an eyeshield over his face before bearing down on the grinding wheel, and he took this precaution even though the wheel was equipped with a safety glass shield. That second's added protection can become as automatic with workers as the old-timer's spitting on his hands before he tackles a job—and has much more sense to it.

●

The plant floor doesn't have to be slippery for a man a take a spill on a job like this. Unless he braces himself correctly in anticipation of a sudden release there is a good chance he'll go down, wrench and all, and it may be more than a three-point landing. This man has his feet well planted and is ready to move out of the way of anything that gives, fast.



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(Leeds & Northrup Co. Photos)

YOUR SAFETY DEPARTMENT MUST . . . FIT GOGGLES TO THE HAZARD

No little credit for the success of an eye protection program lies in the safety department's ability to take the known hazards involved in company operations and furnish the proper protective equipment to cover every on-the-job danger that exists.

ADEQUATE protection based on complete coverage of all exposures in which there is any danger of injury is the important role the eye protection program plays at every plant. This integral factor is responsible for the success in making any eye safety program pay . . . and how well the effort succeeds can be quickly measured by the best yardstick in the business . . . overall reduction of serious eye accidents. It is the only certain method for cutting down severe eye injuries, costly compensation claims and payroll losses to employees.

To best accomplish these ends means putting into effect the establishment and maintenance of eye protection standards and enforcement for various classes of operation and types of work and a program for fitting and maintaining these eye protection devices. To protect eyes at all times and on all operations a further step must be taken. Provision must be made for adequate eyewear which will give the maximum protection for each particular job.

Use of varied types of safety glasses to cover different job requirements may be employed in company-wide programs designed for complete protection against loss of sight by both large and small organizations.

Company Program

To assist employees in the prevention of eye accidents under the gruelling conditions of steel making, an organization like the Weirton Steel Company, Weirton, W. Va., uses some thirteen different kinds of goggles and spectacles for protection from either flash or impact injury, each conforming to contemporary standards of the national safety code for protective eye equipment. In their exhaustive demands for positive eye safety, job operations at the Weirton plant are covered by the use of the following: flip-up goggles for dippers and burners, gas-type welder goggles, coverall chipper goggles, headgear goggles, general purpose glasses, machine glasses, furnace glasses, general purpose spectacles, open hearth goggles, pouring platform goggles, regulation welder goggles, acid proof glasses, and shaded glasses for all special jobs. The use of this diversified array of eye safety devices amply demonstrates how protection standards for various classes of operations and types of work may be employed in the never ceasing job of safeguarding sight.

Optical manufacturers have come a long way since the introduction of this first goggle, conceived at the end of the 19th Century. These early goggles, made necessary by the increased use of chemicals in industry, protected the eyes all right, but they were clumsy, ill-fitting, and vision-obstructing. (From an early wood engraving, Bettmann Archive)

For general shop protective purposes there are two major types of safety glasses: Those designed for protection against impact and those for flash. Goggles or spectacles used for protection against impact are designed to withstand hard usage. They protect the eye from the blow of any flying object and are constructed of case-hardened clear glass lens, or synthetic lens, with metal, rubber or composition type frames. They are

Shatterproof safety glasses used at the Weirton Steel Company plants are specified for construction which will withstand the impact of a one-inch steel ball dropped 53 inches. Thirteen different types of their goggles appear in the background (left to right, starting at left rear): flip-up for chippers and burners; gas type, welders; coverall, chippers; headgear goggles; general purpose glasses; machine; furnace; general purpose spectacles; open hearth, melter; pouring platform; welders; acid-proof; shaded glasses.

made so that the lens will not be unseated by the blow, and so constructed, with proper lens containers, that in case of a blow strong enough to actually break the lens, the fragments will not reach the eye.

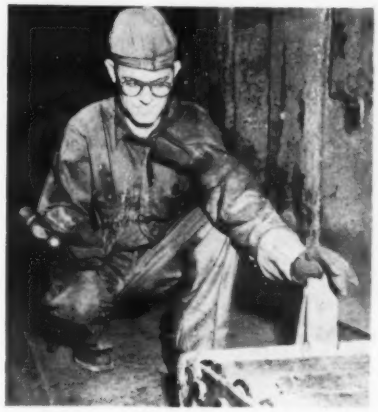
In processes requiring protection from relatively large flying objects, goggles used should have either a rigid non-adjustable bridge or an adjustable metal bridge, and should have side shields. These are the American Standard Safety Code No. 2 goggles. The goggles may also be Style No. 3, and have flexibly connected lens containers shaped to conform to the shape of the face.

Flying Objects

For processes requiring protection from dust and small flying particles, goggles may be of the American Safety Style No. 1, having rigid non-adjustable (or adjustable) metal bridge, without side shields; Style No. 2, with side shields; or Style No. 3, provided with flexibly connected lens to fit the face.

Where the ever-present element of danger exists from splashing molten metal, ample eye protection is needed. This type of work requires the use of properly ventilated goggles of the American Standard Safety Code, Styles, Nos. 1, 2 and 3. This type fits the face tightly and does not fog easily. They are made of non-flammable material with clear, impact-resistant glass especially fabricated to withstand the splash of molten metal.

Workers in processes requiring protection from liquid acids, gases and fumes need a type of eye protection against splashes and vapors from these materials and the Style No. 3, a tight-fitting acid-proof goggle provides fortification against splashes from chemicals. This eye-cup type model is properly ventilated and made of impervious materials such as hard rubber or bakelite. Eye-cup goggles of the type that protect against splashes of liquids are also used as eye protection against non-toxic fumes or gases. However, the goggles used must completely enclose the eyes without ventilation and, therefore, should not be worn for prolonged periods. The usual procedure in fume or gas exposure is to protect the entire face with a mask or face-piece respirator.



Before and after pictures of glasses that fit the hazard. This welder, protected by safety glasses, tests a roller conveyor he has just finished repairing and has his eyes protected from the piece of steel chip which flies from welded surface and smashes the right lens. (Weirton Photos)

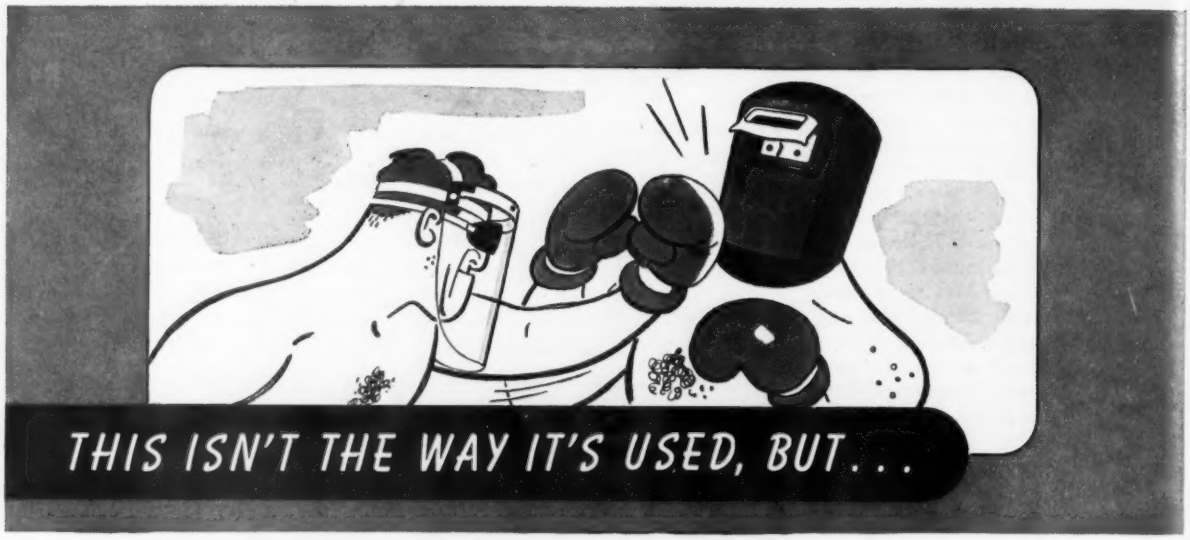
Flash Protection

Processes requiring protection from flash or injurious light sources, reflected light and glare, constitute the other element of eye protection. When a moderate reduction in intensity from visible radiant energy is needed against welding flash, pouring, or open hearth exposures, glasses which require colored lenses that have been specially designed to protect workers' eyes are used. Styles Nos. 1, 2 and 3, are designed to exclude the strong and injurious rays in the exposure. However, in processes requiring protection from injurious radiant energy with the large reduction of the visible radiant energy, goggles do not offer enough reduction, but shields or helmets do.

Where welding is carried on, all exposures in the welding process should be isolated by use of face shields. However, all workers in the vicinity of welders should be protected with eye-cup type goggles properly fitted with color filter lenses which meet with light absorption and transmission requirements to protect eyes from glare and abnormal light rays. The material of this type eye-cup is made of non-corroding, opaque materials, not harmed by repeated sterilization. The inside of the cup is made of non-reflecting finish and the ventilation openings are so arranged that no light penetrates through them to strike the eyes.

Cooperation Necessary

It is only through recognition of the important role eye protection plays that employees become alert to any and every move that will eliminate eye injuries and the subsequent economic losses to themselves. Every assistance must be given employees in the development of an educational campaign to secure and maintain their cooperation. Recommendations on protective standards for various occupations and jobs in the end not only mimimize eye accidents but they also bring about better utilization of individual visual capabilities.



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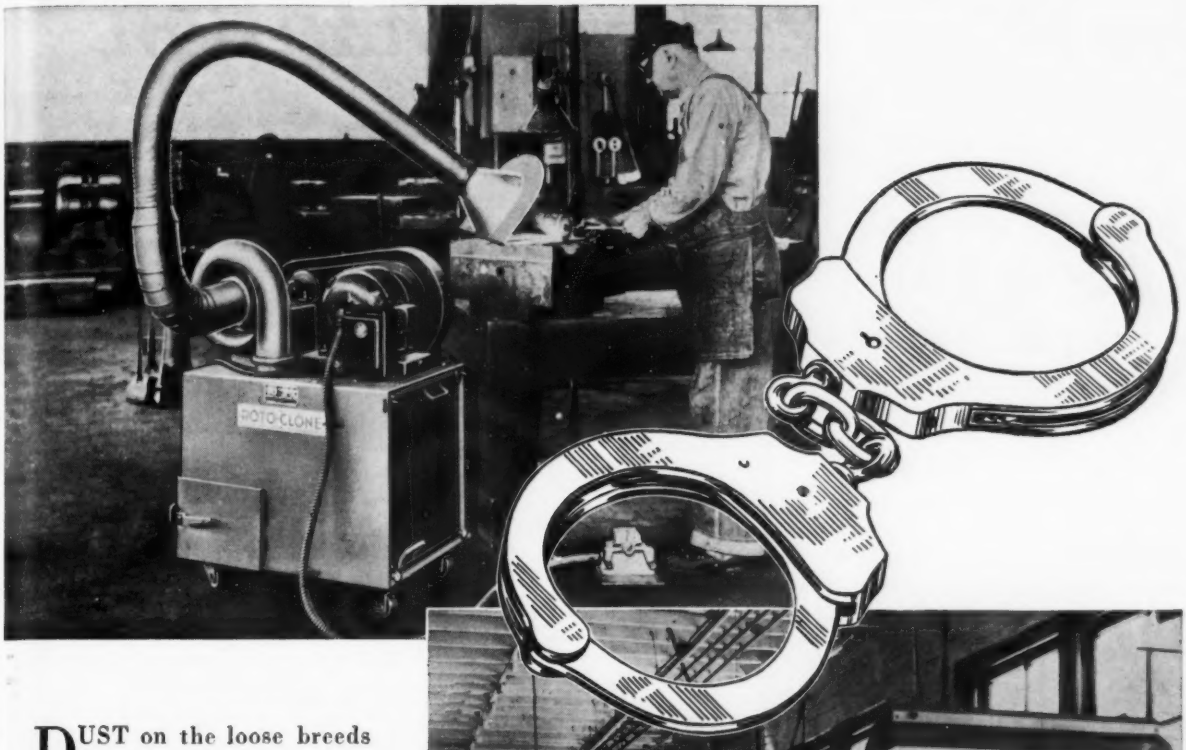
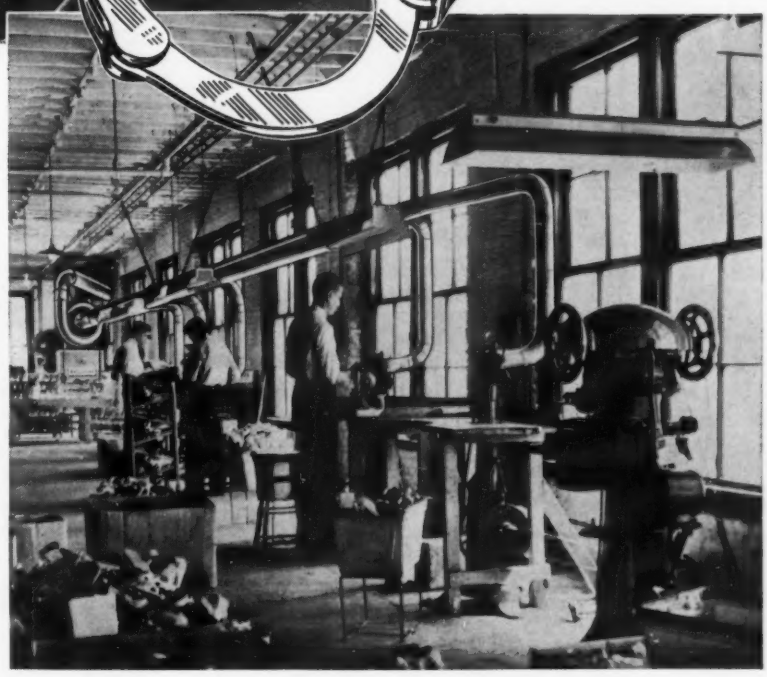
Handcuff dust at its source





DUST on the loose breeds trouble. Workmen, machinery, plant and product—all are handicapped where process dust is not controlled.

The Roto-Clone system of dust control picks up dust-laden air at its source, separates the dust, delivers the collected material to storage hopper or disposal point and expels the clean air all in a single operation—with one moving part. It's compact, requiring minimum space—costs less to install because location at or near source of dust eliminates long pipe lines and expensive outdoor dust collectors.

Roto-Clones are available in a size and type to handle dust separation efficiently over a wide range of particle sizes and specific gravities. There's an experienced American Air Filter representative in your area. He has seen many dust problems that were "different"—and solved them with Roto-Clones. Write today for complete information.

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from MANAGEMENT'S POINT OF VIEW

THE *Compensation* PROBLEM

- **Benefits Are Down**
- **Rates Are Down**
- **Dollar Value Is Down**

FIGURES by the well-known actuary, Richard Fondiller, given in his report to a recent conference of the International Association of Industrial Accident Boards & Commissions, showed a disparity between rate reductions and benefit increases.

In the past 10 years in the face of much social progress along many lines, with the exception of a few states, workmen's compensation benefits have steadily lost ground. Instead of an integrated program enabling benefit provisions to be increased without increasing the level of insurance rates, reduction in the rates for insurance has been made.

Increases in benefits have not kept pace with changes in wages or in the cost of living. No consistent program has been followed to amend compensation acts in an orderly, reasonable, and logical manner, to fit either the needs of workers or the ability of industry to pay the costs.

Unless purchasing power of the dollar increases radically within the next few months, industry can expect activity around state offices pointed toward an increase in compensation benefits. A table is presented here showing various estimated state comparisons of increases in liberality of benefit provisions and of reduction in rates for compensation insurance over a ten year period, since January 1, 1936.

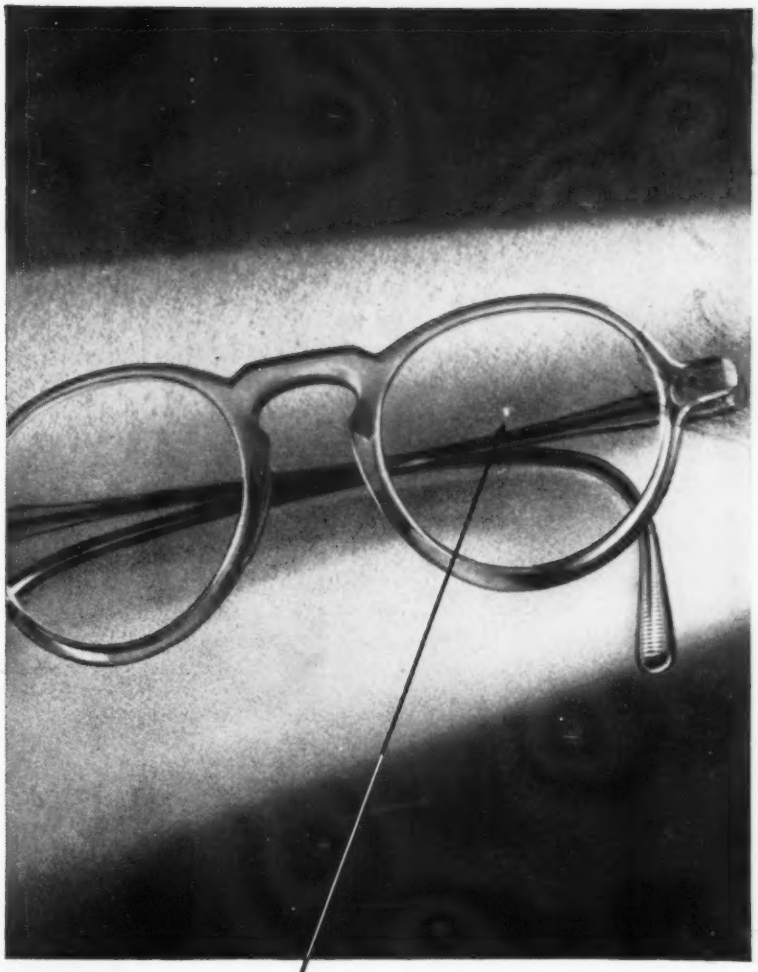
It will be noted with interest that Rhode Island alone, of the 38 states listed in the comparative chart, showed an increase in rates during the past ten year period.

State	Reduction in Rates During Past 10 Yrs. Per Cent	Increase in Liberality of Benefit Provisions Per Cent
Alabama	43.1	16.9
Arkansas	25.2	0.0
California	30.8	6.2
Colorado	30.1	5.6
Connecticut	18.2	10.8
District of Columbia	45.0	0.0
Florida	41.4	20.7
Georgia	40.0	2.9
Idaho	29.5	13.4
Illinois	42.1	13.5
Indiana	45.7	11.5
Iowa	19.5	18.8
Kansas	43.7	0.4
Kentucky	52.2	7.4
Louisiana	41.3	1.7
Maine	29.6	8.7
Maryland	48.7	12.9
Massachusetts	27.1	31.8
Michigan	44.5	22.4
Minnesota	44.0	7.6
Missouri	27.6	.6
Montana	20.7	.3
Nebraska	49.9	9.5
New Hampshire	7.0	15.6
New Jersey	1.8	22.6
New Mexico	34.3	13.4
New York	13.6	7.1
North Carolina	42.2	6.3
Oklahoma	21.9	9.1
Rhode Island	*55.8	67.5
South Carolina	5.7	14.4
South Dakota	42.1	11.3
Tennessee	38.7	19.4
Texas	35.9	.9
Utah	20.2	20.0
Vermont	20.8	16.6
Virginia	38.3	1.8
Wisconsin	35.1	8.7

Example: In Alabama the rates have been reduced approximately 43.1% while benefits have increased approximately 16.9%. In other words, if benefits had been increased as much as 43.1% the rates would have been approximately the same as those in effect on January 1, 1936.

* Increase.

Safety Goggles Win High Praise from Gem Safety Razor Corporation



"This A-O Goggle saved the eye and possibly the life of E. Steller of the Brush Department. This chip in the lens was caused by the tool-bit he holds in his hand."

Typical records reveal that eye injuries cost (in first aid attention, idle machine charges, unproductive time and other frequently "hidden costs") $14.60 per injured man per year. Yet 98% of these accidents (according to the verified figures of the National Society for the Prevention of Blindness) are *avoidable*—mainly through the use of Safety Goggles.

Can you afford to overlook this opportunity to lower your production costs?

Send to your nearest A-O Safety Representative or direct to American Optical Company, Box F, for a copy of the new book, "Eye Accident Costs," telling how to prevent them and how much you can save by preventing them.

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MEN AND MATTERS

News • Activities • Plans

"PITTSBURGH AWARD" TO DR. YANT . . . Dr. William Parks Yant, Director of Research, Mine Safety Appliances Company, and internationally known for research in safety and health, was chosen the 1946 recipient of the Pittsburgh Award, bestowed annually by the Pittsburgh Section of the American Chemical Society for outstanding service to chemistry.

Dr. Yant joined the U. S. Bureau of Mines in 1919, becoming chief chemist of the health division and supervising engineer of the Pittsburgh Experiment Station. During this association, he earned an international reputation for his knowledge of safety and for his vigorous researches.

In 1936 he became director of research of the Mine Safety Appliances Company, where he has developed many new instruments and safety appliances used throughout industry and in the Armed Forces.

PROMOTING GOOD PLACEMENT . . . National Conservation Bureau announces the publication of "Selective Job Placement" a handy reference on the newest of personnel procedures. Written by Tobias Wagner, Ph.D., the book is of interest to safety engineers in view of its research and recommendations on employment success of the properly placed physically impaired, compared to able bodied workers who are not selectively placed. Describes the differences between the two groups with respect to accidents, absenteeism, etc.

FREE FLU SHOTS . . . All 4000 employees of the Manhattan Rubber Division, Raybestos-Manhattan, Inc., Passaic, N. J., by voluntary choice, were given the opportunity of taking free influenza injections.

DR. YANT

ACCIDENT PREVENTION MANUAL . . . After two and a half years of research and preparation, the National Safety Council has published its new "Accident Prevention Manual for Industrial Operations." The 544-page manual, containing 400 illustrations, charts and tabulations, is intended as a handy and authorative source of accident prevention information for safety directors, safety engineers and foremen.

Although prepared primarily for the manufacturing industries much of the information is applicable to non-manufacturing industries and to those with industrial operations, such as railroads, ship operators and insurance engineers.

GOODRICH PROMOTION . . . Clyde A. Voris, with the B. F. Goodrich Company since 1941, has been named personnel manager of the company's industrial products plant in Cadillac, Mich. Voris is a graduate of Ohio University, where he majored in industrial management. A master's degree in personnel management from Akron University was conferred on him early in 1947. His first company assignment was manager of apprentice training and involved close work with safe production methods.

NEW ELECTRICAL CODE . . . The 1947 edition of the National Electrical Code, "Bible of the Electrical Industry," and the safety blueprint which protects even the simplest electrical installation, is now available from the National Fire Protection Association. Presented for the first time in convenient desk reference size, this 408-page volume is uniform in format with the four other volumes of the National Fire Code. The book is unique in engineering reference and contains an advertising section of approved products. Price $2.00.

OPEN COAST BRANCH . . . A West Coast subsidiary of the Burdett Oxygen Company, Cleveland, Ohio, will open soon in the heart of the Los Angeles industrial section, E. J. Morse, executive vice president, announced recently. Built at Huntington Park, California, the new plant is designed to furnish industrial gases, welding, cutting and safety equipment for industrial firms in the Los Angeles area. It will be designated as the California Air Products Company. Winfield Rice has been appointed as plant superintendent.

NEW FLOOR MAT PRODUCTION . . . Resumption of floor mat production in their new Franklin, Mass., factory has been announced by D. W. Noor, of the American Mat Corporation. This company's line includes rubber link mats, tire fabric, counter-tred, wood link, roll rubber, neo-cord counter tread matting, stair treads, rubber runners and door mats for industrial, commercial and home use. The opening of the eastern plant will result in a reduction of freight costs and consequently lower prices on mats.

(Turn to Page 21)

FOR YOUR TECHNICAL FILE
Save Pages 19-20
For Future Reference
A Gold Mine of Information!

The WHAT and WHY of INDUSTRIAL SKIN DISEASES

A163. LOCATING CAUSES. As a rule it is not possible to tell the cause of dermatitis from its appearance. However, it is generally known that where the worker is in contact with irritants such as coal-tar, petroleum oils, pitch, greases, photo-sensitizers, etc., some dermatitis will manifest itself. If skin lesions, boils, pustules or acne appear, following exposure to such irritants, it may be safely assumed that the infection is an industrial dermatitis. Occupational and non-occupational skin diseases can be differentiated by the use of patch tests in the hands of a skin specialist.

A164. DIAGNOSIS. Only a skilled physician or dermatologist should make the diagnosis of skin disease because a thorough knowledge of skin hazards is required for correct interpretation, testing and treatment. In addition, because of the transient nature of skin diseases, industrial commissions and insurance adjusters are usually willing to accept such a diagnosis, since there is little danger that any permanent disability claims will be lodged after the case is accepted as compensable.

The diagnosis will also inform the employer if the skin disease is contagious and thus is a danger to co-workers, and also whether or not it is occupational, due to work which may affect others.

The usual criteria for diagnosis are not infallible as complications may confuse any of the factors of correct diagnosis. For example, in the case of skin irritations due to exposure to cement, elimination of contact does not improve the condition immediately. Eruptions may persist for weeks and even months after exposure has ceased.

A165. VENEREAL COMPLICATIONS. Some chemical skin irritants aggravate an existing venereal disease. During an introductory diagnostical examination the worker should be stripped so that any primary sores or secondary eruptions from venereal diseases may be discovered and dealt with.

A166. IMPORTANCE OF CORRECT DIAGNOSIS. If a skin disease is correctly diagnosed, steps toward the eradication of its cause can immediately be instituted. In the event the condition is found to be contagious, the worker must be isolated and his co-workers watched for symptoms. If the cause is a general irritant the hazard can be studied for the possible substitution of a non-irritant, or a revision of the process which would eliminate the exposure. Other workers can be equipped with safeguards of protective clothing and skin creams. If the irritant is found to be selective in its effect, a worker showing negative reactions to patch tests can be substituted on the job.

A167. GENERAL HAZARD CONTROL. Control of skin hazards includes the co-operation of workers in using protective equipment, in personal hygiene and in the observance of early symptoms. Co-operation is also needed among the chemists, the dermatologists, and the safety engineers to establish a check or inspection routine on new materials, new processes and new employees, both before and after their introduction into the plant.

A168. SPECIFIC CONTROL METHODS. The prevention of industrial dermatoses involves the following precautions:

1. Suction exhaust apparatus for removing irritant dusts, fumes, gases, vapors, mists and sprays at the point of origin.
2. Protective clothing for the worker—aprons, gloves, masks, sleeves, boots, etc., of material impervious to the irritant.
3. Enforcement of cleanliness, a fundamental factor in prevention. As a good housekeeping program, it includes cleanliness of person, street and work clothing, and the plant itself.
4. Protective ointments. In themselves these are not substitutes for more effective protection. They have a place in helping new workers during the time their skin is adjusting itself to new occupations, or in specific protection against fat-solvents, or in the neutralization of certain chemicals.
5. The use of non-irritant industrial cleaners.

A169. PROTECTIVE COATINGS. Although not first on the list of preventive methods, protective skin coatings often represent the only means of protection available. This is specially true where engineering methods have not eliminated completely the conditions that create skin hazards. Again, they may protect skin exposed to irritants which escape into the air despite other preventive measures. Finally, they protect the face, for which there is no feasible protective covering in normal operations, or bare hands when the speed or intricacy of the operation makes gloves unsuitable or unpopular with the worker. In general, this method of "barrier" protection is widely used because workers appear to like the use of protective ointments. They invariably remove them with soap and water right after work, thus removing at the same time the irritants that are present on the skin surface.

A170. LIMITATIONS. The utility of a protective coating is to protect against minor occupational harm and to ward off skin breaks and abrasions, not to provide protection against excessive exposures or for over-sensitive individuals with allergies. Found to be effective against injuries from powders and fat-soluble materials, for example, have been emulsions of oil in water with a fat base of beeswax. There is obviously no one product effective for every type of skin hazard. Each class of exposures, however, has a particular type considered most effective, not as a treatment, but as non-medical protection. Often called "invis-

The WHAT and WHY of INDUSTRIAL SKIN DISEASES

ible" or "cosmetic" gloves, these applications range from thin insect repellent ointments (now also put in industrial creams for night shift workers) to substantial coatings carrying protection against solid particles and light rays.

A171. PROPERTIES OF GOOD COATINGS. A good protective coating should have the following properties:

It should be non-irritating and non-sensitizing and have the proper pH.

It should offer actual protection against the irritant.

It should have a consistency convenient for easy application and should remain stable in composition.

It should be easily removable after work, yet stay on the skin during the worker's exposure period.

A172. COMMON TYPES. The common types of coating available from manufacturers fall into the following distinct groups with specific purposes. These are in addition to the simple skin-nourishing vanishing creams which are designed to keep skin in a natural, smooth, moist condition. Applied before an exposure to fill the pores, the latter soap creams subsequently aid in the removal of soil after work.

1. Applications leaving a thin film of resin or wax on the skin, drying completely when applied.
2. Ointments containing a non-irritant chemical to offset a known irritant.
3. Ointments which protect against sharp particles by causing inert powders to adhere to the skin.
4. Applications which contain screens against exposure to sunlight, and to substances that photosentitize the skin, such as tar and pitch.
5. Harmless fat pore-fillers which repel water soluble irritants and prevent penetration of oils and greases.

A173. RESIN OR WAX COATINGS. Prepared in two varieties, one soluble in water and the other insoluble in water, these ointments offer good protection against facial dermatitis, sometimes caused by the edges of gas masks and respirators. The water soluble films afford some protection against chlorinated hydrocarbons, petroleum distillates and similar solvents and water-insoluble sensitizing exposures such as TNT and tetryl. However, because they are easily removed by water, any perspiration accumulating beneath the film tends to flake it off unless the ointment has a fat or oil included to offset this action. The water-insoluble ointments represent the reverse process, being used to keep out irritants that are soluble in water. They can be removed by the vigorous use of warm water and a mild soap, but generally need a special removing cleanser, and a follow-up application of a cold cream emollient or soothing agent. This is especially true if shellac is the resin ingredient. The water-insolubles are generally used in exposures to acids, alkalis, water-soluble metallic salts, etc.

A174. NEUTRALIZERS. The protective coatings which neutralize chemical irritants on the skin usually do so with a non-irritant chemical ingredient. A cream intended to protect against alkalis may contain boric or benzoic acid as a neutralizer. Sometimes an animal or vegetable fat or oil may be added to combine with the alkali exposure to form a soap. A cream intended to protect against acids may have soap as a neutralizing agent. Lanolin and castor oil are the usual bases.

A175. INERT POWDERS. Skin coatings of inert powders are achieved by using powders such as calamine, kieselguhr, iron or zinc oxide, in a binder consisting of a water-soluble resin like pectin. These powders act as a barrier against skin breaks from such substances as glass fibres, steel slivers, and plant or produce prickers.

A176. LIGHT-SCREENS. Photosensitization protection is especially beneficial to tar and oil-refinery workers. They are exposed to distillates like tar and pitch and petroleum residues that sensitize the skin to light rays to such a degree that small amounts of sunlight are comparatively dangerous. Outside workers exposed to excessive sunlight are similarly in need of some protection. Protective coatings have for their composition mainly a harmless fat ointment to which has been added a light-screen, such as tannic acid.

A177. HARMLESS FATS. A similar harmless fat coating without the light-screen is prepared for hazards involving cutting oils, greases, creosote oil, etc. A synthetic wetting agent is frequently added for easier removal of the application at quitting time. In filling the pores, the fat not only repels water-soluble chemical irritants, but prevents admission of irritant oils, and similar dissolvers of skin fats. Any such solvent action can not act upon the skin until the protective coating is first dissolved.

A178. ENGINEERING. Despite the personal protective measures available, engineering is still the most reliable prevention method for skin disease control. Designers of modern machinery can lessen exposures by revising, enclosing or adequately exhausting the hazardous process, ruling out the human factor as completely as possible. Auxiliary controls are good plant sanitation and high housekeeping standards.

MEN AND MATTERS

(*Continued from Page* 18)

LOSS TO LABOR STANDARDS . . . V. A. Zimmer, Secretary-Treasurer of the International Association of Industrial Accident Boards and Commissions, and Director of the U. S. Division of Labor Standards, passed away recently. This is an irreparable loss not only to his friends and associates but also to the field of labor law administration. The Executive Committee has designated Marshall Dawson, of the U. S. Division of Labor Standards, to act as Secretary-Treasurer until the Association's next election at their annual convention in September at Toronto.

GENERAL DETROIT OPENS IN ATLANTA . . . J. H. (Jack) Gaines has been appointed Southeastern Regional Sales Manager in charge of the new Atlanta factory branch and warehouse of the General Detroit Corporation, manufacturers of fire extinguishers, motorized fire apparatus, and allied equipment. According to E. A. Warren, vice president in charge of sales, the Atlanta office will serve the states of the southeastern region, providing this area with the same expanded service now being supplied by General's other regional offices in New York, Philadelphia, Chicago, Dallas and Detroit.

RADIO AIRS HAZARDS . . . The fight against health and safety hazards in industrial plants is receiving new and strengthened public support from a series of radio dramas presented over Radio Station WJW, Detroit, Michigan. These 15 minute radio dramas are broadcast every Saturday at 1:45 P. M., in a thirteen week series and include such titles as "When Thoughts Are Killers," "Only Two Lungs To A Customer" and "The Skin Game."

LEGAL AIDS . . . The Standard Accident Insurance Company, Detroit, Michigan, has released to all its Kentucky agents a sales kit of production and advertising aids on the new Financial Responsibility Law which became effective in that state on January 1, 1947.

The promotion pointers in this standard sales kit are the result of tested use of similar material where law revisions of this nature have appeared in states throughout the country.

Designers of modern machinery can lessen exposures by revising, enclosing or adequately exhausting the hazardous process, ruling out the human factor as completely as possible. Auxiliary controls are good plant sanitation and high housekeeping standards.

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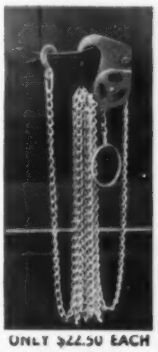

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514 ORANGE ST. . . . . COSHOCTON, OHIO

. . . And Sudden Injury

Fire, that useful servant of mankind, often turns on its master with horrible results. Here you see one such result. No, it isn't pleasant to contemplate. Like a bad dream—yet so real, it hurts to look. That's because you know it isn't an artist's sketch. It's the photograph of a burned man shortly after admission to the hospital. Thanks to efficient first aid and subsequent professional treatment, the man lived. The suffering is now a memory, but we're glad the camera caught it. Every blister, every pore cries: "It hurts! YOU be careful!" →

← And Sudden Injury . . .

FIRST aid men handled Joe gently. They knew what was under the burned clothing. Every one of the sensitive nerve endings located in the burned skin was sizzling. The onset of shock was fast. Thirty-one per cent of Joe's body surface was scorched.

Both second and third degree burns were involved. Joe's face, chest, abdomen, arms and legs were blistered. No one who has ever smelled flesh burning can forget the odor, and the men who placed Joe on the stretcher were green with nausea.

Practically everyone at one time or another has burned his finger and waited long minutes for the stinging to subside. Multiply the area and the time a thousand times—one thousand finger burns all aching at the same time—and you begin to imagine what Joe felt in that first searing flash of fire. At times like that, death seems kind and life a liability. The unconsciousness of shock is merciful, but that is death's threshold. Circulation to the fluid-starved tissues, the pulsating nerve-ends, is short-circuited; the body fails to get all oxygen it needs for the blood.

Any open skin means possible contamination and infection. Germs are on clothing and in the air. No skin is more sterile than at the time of a burn, for fire kills bacteria and skin cells alike. But one minute, even one second later, any skin breaks mean possible entry of infectious agents into the blood stream. Medical attention must be prompt on three counts in bad burns—pain, shock and infection.

Joe was proud of his body. He was young and supple, his skin firm and resilient. But it wasn't asbestos. To preserve that skin in industry we have long lists of heat-resisting personal equipment. There is no need to run hazards of trials by fire to show manliness.

Joe's recovery is now medical history. Long days and nights of rigidity, when he couldn't lift a glass of water to save his life, were rewarded with firm, soft growth of new skin. Grafting was necessary to his right knee, but even that additional torment subsided. Three months were erased from his life, but the memory—it's more vivid than this picture. He is one man who has learned to keep fire at a safe distance.

(Photo—Carbisulphoil Co.)

Series 70 cover-spectacle goggles.

Three and a Half Ounces of *PREVENTION*

- Light weight, sturdy, molded plastic construction.
- Comfortable, well ventilated for continued wear.
- Offers maximum eye protection.
- Brace bar permits easy, one hand adjustment.
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If you are not familiar with the wide range of PLY protection, we urge that you get the facts by writing for your copy of our book "The Answer to Industrial Dermatitis."

The only reference book of its kind "The Answer to Industrial Dermatitis" is of inestimable value to all concerned in combating industrial dermatitis.

PIONEERS IN RESEARCH FOR PREVENTION OF INDUSTRIAL DERMATITIS

THE MILBURN COMPANY
3246 E. WOODBRIDGE • DETROIT 7, MICH.

Putting TEETH Into

There is an essential relationship between the problem of general health and dental health. For this reason dental services have been established in industrial plants which have recognized the wisdom of providing some degree of supervision of employee health.

Industry must concern itself with the oral health of workers to protect its investment in trained manpower. Here are recommendations for a program aimed at prevention of dental ailments which will curb absenteeism due to dental diseases.

TODAY, industry's toothaches are varied and endless, with pain, loss of sleep, fatigue and mental distraction setting the stage for increased absence from work. These neglected and septic mouths are also a potential source of costly loss to workers and management alike. Thus, with absenteeism and inefficiency as major problems in production, the entire approach to industrial hygiene must undergo important changes. For now, once recognized that the sick worker is a loss to management whether he has lead colic or an infected mouth, steps must be taken for prevention of recurrence. One of the *first* steps in the preventive maintenance program must be tooth care.

With this thought in mind, the dental program is one approach to the health improvement of the industrial worker. This dental program may be educational, remedial or both. However, some form of dental program should be incorporated in the industrial medical program in order to bring results of preventive practice to a higher degree of perfection. If there is to be an improvement in the dental health status of industrial workers, certain suggestions as to the minimum dental health service are offered by the Industrial Dental Committee of the Council on Dental Health of the American Dental Association. These are:

(1) Preplacement and periodic dental examinations and diagnosis of all employees.
(2) Emergency treatment only, in the plant, and referral for additional dental services outside of the plant.
(3) Treatment and eradication of oral infections.
(4) Adequate recordings of findings and recommendations for comparisons with the cause and duration of absences from work.
(5) Education in dental health and follow-up of individuals to encourage complete and regular dental care.

Dental programs are more common than one might be led to believe. A recent survey of 498 industrial plants brought to light some interesting facts, a few of which are as follows:

(a) Thirty-three industrial establishments reported the scope of their dental service as being chiefly examinations and prophylaxis.
(b) Twenty-four industrial establishments reported the inclusion of limited treatment service with the examinations and prophylaxis.
(c) Fifty-six industrial establishments reported the inclusion of a fairly broad treatment service in their dental programs.

Method of Payment

Inquiries in a questionnaire concerning the method of payment for dental services showed that when examination, prophylaxis and some treatment was offered, the expense was most frequently borne entirely by the employer, as his contribution toward the good will and efficiency of his working force. Cooperative arrangement wherein the company

...nto Your Health Program

furnished space for a dental office and a certain amount of major equipment while the patients paid the dentist was found next in frequency. A local dentist who was engaged, usually on a part-time basis, brought with him his own instruments and supplies, and usually charged by the filling or extraction or whatever the case might be. The fees were usually lower than those scheduled in private practice, since the dentist's overhead in the factory was negligible, his practice more regular, his bills easier to collect and he could count on reasonable income at a reduced schedule of fees.

Small Company Program

It is possible that even these expenses may prevent some smaller companies from establishing a dental service. Initial expense may be reduced in several ways, one of which is by forming a pool with other small companies and renting nearby private dental facilities for a definite proportion of time each week. Portable dental equipment brought into the plant at agreed intervals will keep the employee on the premises of the company and no doubt conserve time that would be used in going to and from a dental office located some distance from the plant.

The Metropolitan Life Insurance Company has drawn up a dental budget for a company employing 1,000 persons, and wishing to establish a dental office on its premises for examination, prophylactic work, emergency, consultation and first-aid service, extractions and cement fillings. This is approximately $2,000 for initial installation and $5,400 for annual running expenses. The type of equipment and the extent and amount of dental service rendered would of course have considerable bearing upon the final cost of a dental program in a specific industry.

The economic value of good dental health must not be lost sight of in considering the cost of a dental service to industry. Insurance statistics based on physical records of 1,000 employees with good mouth conditions and 1,000 with bad mouth conditions, selected at random from their files, showed that the people with bad mouth conditions had a greater incidence of ailments which formed the direct or indirect cause of other illnesses which resulted in absences from work.

Current surveys also corroborate this statement, revealing an average of over four-and-one-half days per employee are lost from work because of toothache or some dental ailment. From this figure it is easy to see that the dental disability rate *is* an industrial liability.

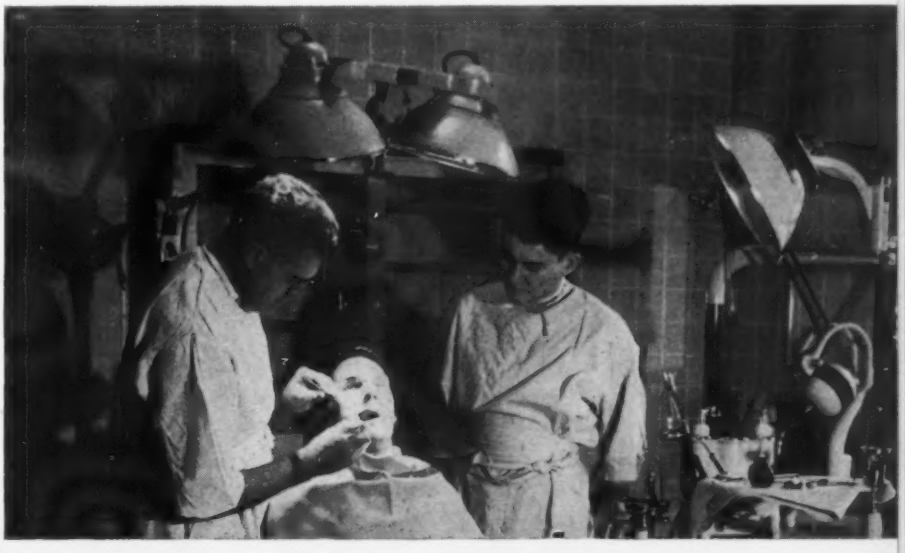
These figures also leave plenty of room for thought, and management should be vitally interested in this phase of industrial health on consideration alone, that it will assist in keeping employees in fit condition to be at work each day. An industrial manager has but to sit down with pencil and paper and figure out yearly production losses due to absenteeism from dental sources and balance them against the cost of a dental care program to see how these services can save a plant money. Wherever there is complete health service, dental and medical, conclusive proof is available to show that by controlling dental infection, employee lost-time results are materially reduced.

Management's Program

Says Dr. R. M. Wells, as Chairman of the Committee on Economics of the American Dental Association:

"An ideal dental service in industry is one established under the direction of the medical service and headed by a dentist in good standing in his local dental society and qualified in such fields as may be included in the service. A mouth examination of each employee should be made by the dentist every six months, dental diagnostic films being made and defects charted. A cleaning up of the mouth should be done by the dentist and the employee referred to a private dentist, of the employee's own choosing, for any reparative work indicated. The worker should be urged to obtain the necessary dental treatment and time should be taken at this opportunity to educate and motivate him in the value of maintaining oral health."

The size and cost of an industrial dental clinic, in personnel and equipment, depends upon the number of employees to be served and the extent of the work to be done.



Union Twist Drill Invests

In *Eyesight Efficiency*

By William T. Cameron

This month's Plant Picture Story uncovers a comprehensive program for "detecting and correcting" subnormal vision.

THE Union Twist Drill Company, of Athol, Massachusetts, manufacturers of high speed drills and cutters, decided to do something about the vision of its 831 employees. Following a thorough investigation, the company adopted a comprehensive program for "detecting and correcting" subnormal vision among its people, the guiding principle being to refer all employees operating below their highest potential level of visual efficiency to the ophthalmic (eye) profession, regardless of the employee's job.

Basically, the program establishes an efficient and economical method for "seeking out" workers needing visual attention and a follow-up plan for bringing visual care to those shown to be in need. The members of the eye care professions practicing in the community in which the industry is located are advised of the job visual demands and take these requirements into consideration when diagnosing and prescribing for the personal visual difficulties of a particular employee.

The first step undertaken by the Union Twist Drill Company in installing the plan was to hold a meeting between management officials, a prominent Athol optometrist who had been invited to assume professional responsibility for the program and the American Optical industrial engineer. Under the direction of the doctor, a nurse was trained in the operation of the vision checking instrument and a schedule worked out whereby the employee's vision was checked with a minimum loss of time away from his job. With some three to five minutes for the actual checking time, the employee was back on his job within ten to fifteen minutes.

After screening and professional eye care, this milling machine operator's vision is now corrected and fully protected.

Short work distance requires special occupational correction in protective goggles needed for this precision drill polishing.

Employees were informed of the doctor's decision and given the opportunity to secure the necessary eye care.

The professional consultant, in company with the American Optical Co. industrial engineer and the plant superintendent, made a complete job visual analysis of all operations within the plant and made a number of suggestions for improving the environment from a standpoint of better seeing. In addition, the professional consultant assisted in the general eye protection program and either personally fitted or supervised the fitting and servicing of eye protective devices. Where prescription safety goggles were involved, the fitting and servicing were performed by the employee's own doctor.

Facts Disclosed

The officials of the Union Twist Drill Company made frequent checks on the effectiveness of the program and their findings were tabulated as the program progressed. Among the facts disclosed were the following:

Of the 831 employees, 209, or 25.1%, needed professional eye care, 126 of whom were provided with prescription safety goggles because they needed both visual correction and protection on their eye-hazardous jobs.

The vision check disclosed that 40% of the workers had less than 20-20 (normal) visual acuity at near, and 35% had less than 20-20 acuity at distance.

Further, 10% lacked good binocular vision, or the ability to use their two eyes as a unit, 25% failed completely a check for stereopsis (depth perception), and 10%, when checked for phorias, showed a tendency for their eyes to deviate excessively. Finally, in a check for color blindness, 10% were unable to pass the test.

Most startling were the findings among a group of fifteen "accident prone" employees who, in the first five months of 1946, before they were reached by the program, experienced 145 injuries and 28 other physical disabilities. After their visual deficiencies had been discovered and professional eye care services rendered, this group's accidents dropped to 44 and health disability to 4 in a similar five-month period, from June to October. A comparison made with the normal expected number of visits to the First Aid room by the average employee showed that all but one of the fifteen had been taken out of the "accident prone" category.

Favorable Acceptance

Employee acceptance of the program was good from the very start. This interest was further stimulated because an eye was saved from probable blinding when a small emery wheel, travelling at 20,000 r.p.m., broke and particles struck the lens of the worker's newly prescribed corrective-protective goggle.

Experience in a number of other industrial plants that installed similar programs indicates that industry generally is quick to appreciate the benefits to be derived from an industrial safety and visual efficiency program which attacks the vision problem as one of the underlying causes of poor workmanship, inefficiency, ill health, accident proneness, and absenteeism. A close working relationship between industry and the ophthalmic professions presents an excellent opportunity to provide employees with needed eye care services and, at the same time, increases industrial efficiency and safety.

Professionally prescribed corrective-protective goggles augmented by magnifier promote higher quality work with safety.

Corrective-protective goggles with Calobar lenses provide security and efficiency on this long distance job.

POWER PRESS SAFETY *Tips* . . .

PART II — IN A SERIES ON GUARDING OF POWER PRESSES

IN conjunction with other types of guards, some plants are installing photoelectric cells which throw a beam of light across the area in front of the dies. The photoelectric relay is in line with the punch press motor in such a manner that any interruption of the light beam causes the press to stop. Through the use of relays and solenoid switches, this device may be connected to the foot pedal to prevent the pedal from being moved when the light beam is interrupted.

Operating Personnel

No human mind is capable of performing 15 to 20,000 identical operations a day without momentarily wandering. If a guard does not eliminate this phase of the human element of the press operation, it may not be truly classified as a guard. In choosing operating personnel, their dexterity, mental and physical abilities should be considered. Only those persons who can qualify should be placed in this type of work. A training program should include all of the safety factors which may enter into the operation of any presses such persons may be required to operate.

The lighting about the presses should be such that there is no glare and a sufficient amount of light is concentrated at the point of operation, so that the operator is not subjected to eye strain or to illusions through fast press operation. Color painting of the press guards and the press room, attributes to greater press and general safety. Good housekeeping must be maintained to keep oil, metal chips, parts, from the floor near the press. Some means of controlling, cleaning up, or absorbing oils should be provided.

The position of pedals, operating buttons, or levers, should be such that the operator is subjected to as little strain as possible and the height of the chairs and stools should be regulated to fit the size of the operator.

Care should be given to the clothing worn by press operators. Clothing should be tight fitting with no loose or ragged portions that might catch and hold the operator's hand in the die, or become entangled in the guard. Gloves should not be worn by press operators.

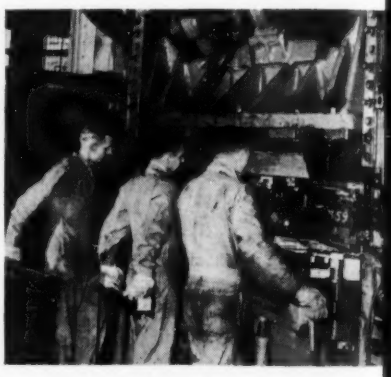
Up-keep a Requisite

Aside from guards and the human element, safe operation of power presses requires vigilant up-keep, accurate adjustment, and adequate repairs. The brake and the clutch must be given closest attention for defects. The brake is the most simple and perhaps the most important part of the power press, yet many serious press accidents every year can be traced directly to the defective brakes.

Press brakes which must bring the shaft and ram to a stop twelve to twenty thousand times a day may be oil-soaked and so badly worn that there is no braking power left. Brakes found to be in poor condition should be re-lined with good brake lining.

If there is not already a spring under the adjusting nut, one not less than 6 inches long and strong enough to compress the brake with very little

Operators hands are removed from danger zone by automatic pull-back safety device used in punch press department at Lockheed Aircraft Company. ↑



On this multi-controlled press, each operator must push two starting buttons at the same time. This precaution guards against possibility of any man having his hands in the machine when it starts operation. ↑

To operate this two-hand controlled press at Douglas Aircraft Company, operator grasps levers at either side of machine. The tool is lowered simultaneously — preventing hands from getting caught underneath moving parts of press. →

compression of the spring should be used. It should take about three turns of the adjusting nut to make a one-degree change on the angle of the crankshaft, which should always stop five degrees before top dead center. With a spring as described, the brake will stay in proper adjustment for considerable time, and the ram will have no tendency to fall.

Brake Adjustments

What is often taken for repeating may be nothing more than a falling ram caused by a loose brake. Die setters have been caught by a falling ram while setting up for a morning run. In running all day, the brake hub expands and at night cools, leaving the brake so loose that a slight jar will cause the ram to fall.

With a good brake properly adjusted, the emergency stop will not be pounded to pieces if the press is constantly over-running, which, in time, is bound to destroy the clutch. Clutches on power presses are of many different types. No two makes have the same type of clutch, and very often, the same manufacturer will have four or five styles for the same size press, each being an improvement on an earlier type.

Older types of presses with dangerous brakes and clutches may be found in up-to-date plants. They are often patched up with homemade and makeshift parts, instead of being repaired with proper parts secured from the manufacturer.

Proper Lubrication

Very little care has been given by most manufacturers to the proper lubrication of the clutch pins on the pressure side. In constant service the pin becomes dry; the lubricant is pressed out by the heavy pressure, causing a metal-to-metal contact. This causes the clutch pin, under the constant hammering effect, to work slowly under the spring pressure so that the pin often catches only at the outer end and thus soon wears off its sharp corner. There is no detail in press operation more important than proper lubrication. Under ordinary conditions the press should be lubricated twice daily, and by someone thoroughly qualified to do the job. Failure to keep plenty of grease and oil on the press is eventually bound to cause a breakdown and necessitate extensive delays and costly repairs.

(To be continued)

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THE SURETY RUBBER CO.
CARROLLTON, OHIO

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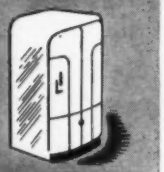

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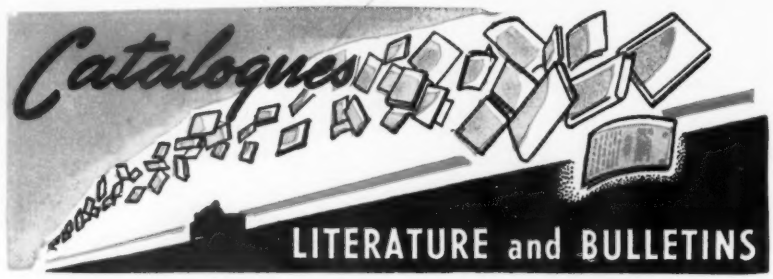

The publications featured on these pages were written by experts. They may be obtained without charge. To obtain these use the postcard bound into this issue.

FL 574—Industrial Cleaner . . . Six-page illustrated folder from American Oil & Disinfecting Company describing "Whistleclean," a water soluble cleaner and detergent for use in industry, where cleanliness contributes to better health.

FL 575—Germicidal Conditioner . . . Pamphlet information on a germ killing irradiation lamp manufactured by Tru-Air UltraViolet Products Company . . . on the type of protection used against air-borne infectious diseases in industry.

FL 576—Safety Containers . . . Catalog offered by Protectoseal Company, manufacturers of gasoline safety cans, describing effective container devices for reducing fire and explosion hazards common in most industries.

FL 577—Safety Tool . . . Bulletin from Persson Manufacturing Company detailing information on a Safety Die Jack which eliminates ordinary haphazard and dangerous methods of separating die and punch sets.

FL 578—Chip Guard . . . Information about the Stasafe Chip Guard manufactured by Standard Safety Equipment Company. A new type lathe and wheel guard permitting continuous work inspection with safety against the hazard of flying particles and oil.

FL-579—Individual Dust Collectors . . . Aget-Detroit Company bulletin No. 392 on installation of Dustkop individual dust collectors for healthful collection of dust, lint, rouge from polishing and metal coloring operations.

FL-580—Oil Absorbent . . . Descriptive literature on Oil-Dri, a granular product which absorbs oils, greases, fats, paraffin, emulsions, oil and water "slicks" and is used to remove slipping and fire hazards on industrial premises.

FL-581—Dry Chemical Extinguisher . . . Information on Ansul-Dugas Dry Chemical Fire Extinguisher equipment: hand-wheeled and mounted. Gives recommendations for the proper fire stopping protection against gas, oil gases, greases and electrical equipment fires.

FL-582—Fire Protection . . . National Foam System Inc., catalog describing all types of National Aer-O-Foam fire protection equipment and installation systems designed to serve industrial organizations and fire departments.

FL-583—Punch Press Safety . . . Positive Safety Manufacturing Company literature on the new and improved pull-back type Possons Positive Safety Device for press operators working on drop hammers, punch, toggle, embossing and special presses.

FL-584—Hard Hats . . . Mine Safety Appliances Company bulletin No. DK-13 describing MSA Skullguards for protection against all head hazards encountered in industry.

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Look for the cord, rubber and straight ridges, exclusive with SAFE-HI Ladder shoes. Also self-sharpening spikes, made with tool steel core . . . no inspection or sharpening . . . never a hazard from dull spikes. Many other exclusive features, too.

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1731 Arapahoe St., Denver 2, Colo.

The Pay Off

Each month Occupational Hazards magazine plans to select one or more outstanding safety plans in some industry that have paid off in a dollars-and-cents return attributed directly to reduced compensation costs or indirectly to uninterrupted production of indispensable personnel.

Company ledgers too often have no provision in their columns for this investment of time and effort.

The Lord Company Puts Safety First, FIRST

By WALTER RUDOLPH

LAST year employees of the Lord Manufacturing Co., Erie, Pa., working nearly 3,000,000 man hours, hung up an accident frequency rating of 4.3 and a severity rating of .08—and it wasn't just "an accident!"

Behind that enviable record stands a carefully integrated plant safety program, headed by Walter Voss, employed full-time as safety director, and having whole-hearted cooperation from safety-conscious management and workers. The latter show enthusiasm about gratis first aid instruction and the formation of volunteer First Aid Squads, no little factor in practically eliminating the lost-time accident.

An accident is simulated — crates are placed in tumbled disorder, just as if the bottom one had given way or they had been piled too high, and an employee stands or lies with a leg or arm apparently pinned and badly injured. A tag is hung on this man, designating the possible nature of the injury.

Just as the routine would be followed for a real accident, another worker or the section supervisor steps to a strategically located microphone, or call box, flips a switch, and asks for the area First Aid Squad. Members of this squad, who hear the call over a public address system, immediately halt their regular tasks and go into action. One is detailed to pick up a first aid kit while another goes for a nearby stretcher.

Captain Takes Over

All of them converge upon the scene of the accident and the squad captain takes charge. He determines as nearly as possible the extent and severity of the injury. If advisable, temporary treatment is given to suit the case. And if the man can be safely moved, he is expertly placed upon the stretcher and transported to the plant dispensary.

Recently remodeled, refurnished and spotlessly white throughout, the dispensary is a showplace in itself. Six

Two women workers, with working area well lighted, are using safety cans for processing strips of material. Note other safety cans, left, on work table. Tables are also grounded to prevent static sparks, a hazard when working with inflammable liquids and rubberized material.

rooms, each about the size of the ordinary hospital room, have been allocated for this part of the plant. Mrs. Mae Fairweather is the trained industrial nurse in charge, and the first aid drill ends with her taking care of the supposedly injured person.

But the squad captain has one additional responsibility—the making out of a "First Aid Accident Report." The report blanks are kept in the dispensary desk prior to being used and when filled out are given to Director Voss for filing in the personnel office. These blanks are ordinary sheets of white paper with mimeographed lines that require the following information:

Name, address, clock number, telephone number, nearest kin, address of same, time, machine, department, type of injury, what first aid given, disposition of case, Squad No. and Captain, remarks and suggestions, the signature of the Squad Captain and the First Aid Director.

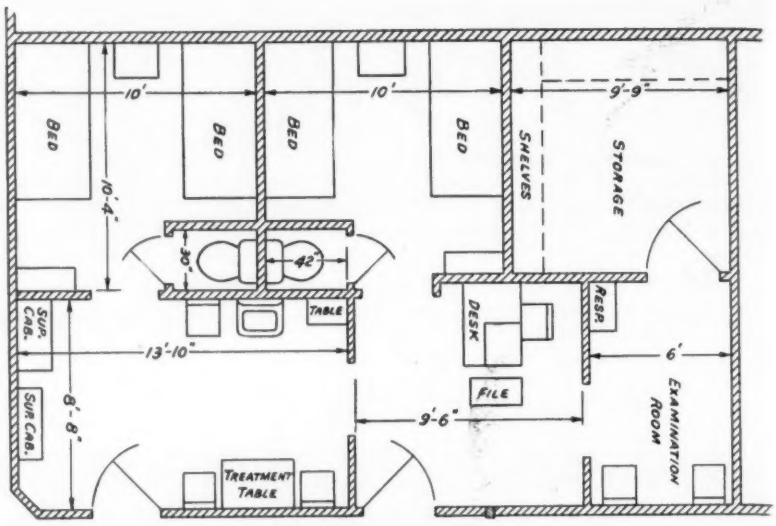
First Aid Classes

During war years, with production going on around the clock, a number of first aid classes were initiated and subsequent squads formed. Volunteers for this desirable instruction are solicited by announcements of class formations posted on company bulletin boards. The usual procedure has been to have five two-hour instruction periods, conducted orally in a plant conference room.

Only employees who have certified knowledge of standard Red Cross first aid procedure are permitted to enroll for this free instruction, and upon completion of the advanced study they are presented a card, which states their advanced rating, and a conspicuous badge that may be worn about the plant.

Squads can vary in size from five to seven men. As high as six squads were organized during the three shifts necessitated by the war, and there was a waiting list of volunteers for this valuable work. Old-timers on the squads must take a "refresher" course every three years.

Important as this first aid knowledge is, of course much of the plant's safety program is aimed at preventive measures—getting at trouble before it gets at the workers. Intra-departmental conferences have had much educative value in this respect, with talks being given on various



Sketch of dispensary lay-out

phases of plant safety conditions. One meeting might be devoted to the proper procedure in grinding, the insistence of goggle protection for the eyes, and so forth, while another discussion takes up safety in the operation of certain kinds of machinery, or the handling of heavy objects.

Obeying what has been called the first principle of safety in any work, this factory has tried to reduce the physical hazard of any given task to the maximum extent practically possible. Examples of this practice are to be found in the enclosing of gears, the elimination or encasement of projections that might injure, and so forth.

Post Signs

A large assortment of "danger" signs, posted throughout all departments of the factory, constitute another aid to the safety program. For instance, the handling of material in many departments calls for the use of overhead cranes which, in this factory, are individually operated from exposed electric monorails, and red and white signs are posted to warn operators of the possibility of injury, such as from short circuits.

Other signs warn of running, of traffic outside doors, of the location of stretcher boxes, fracture boards and fire blankets, and one particularly explicit message is given on the cards posted near the strategically located call boxes, or microphones. This message reads:

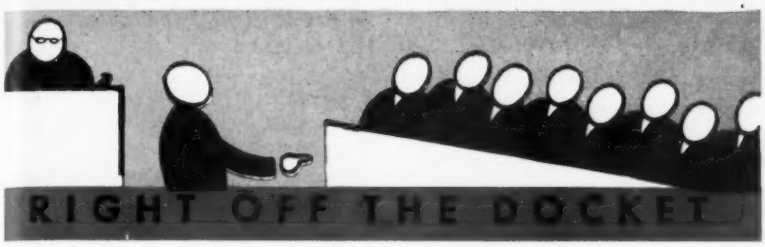
"Notice. This microphone is to be used for Fire, First Aid and other Emergency Calls only. 1. Hold switch over to left while talking. 2. Give call six (6) times. . . To call Fire Crews to this area, use name of either of the following departments. . . 4. Call First Aid Squad . . . for this area."

Fire System Commended

To comment further on fire prevention in connection with safety, this plant has been commended as having one of the most complete fire prevention and fighting systems in the country for a medium-sized plant. It includes volunteer fire-fighting crews, mobile fire-fighting equipment, complete sprinkler protection, plentiful hose stations (both inside and outside the plant, and on the roof) and extinguishers, sand buckets, CO_2 hook-ups in highly flammable areas and so forth.

The completeness of the dispensary's facilities is noteworthy. Its equipment doesn't stop at the stocking of medicants and bandages, but includes equipment able to cope with practically any emergency. Two of the six rooms are termed "slumber rooms" and each has its private lavatory. Cupboards contain a generous supply of blankets, stretchers, emergency cots and general supplies.

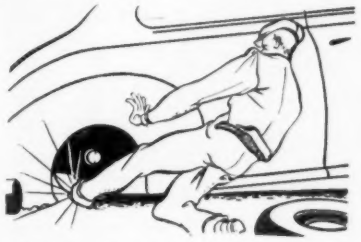
Plant personnel are rightfully proud of their safety program. Departments periodically exchange inspection visits, with maintenance looking over the tool room, and vice versa, so on down the line. In the fresh start of 1947, Lord Mfg. continues among the nation's leaders in industrial safety.



The trend of litigation on workmen's health and accident compensation is reflected in these briefs on the latest and most representative cases coming to trial in the intervals between issues. Familiarity with this trend is important to every industrialist. Clip cases and file for future reference.

Injury Received While Fixing Tire On Lot Furnished By Employer For Parking Purposes

LEVENGOOD was employed as a painter. He "checked out" after his day's work and went to the parking lot provided by his employer for company employees. When he reached the car, he found that it had a flat tire. He did not have a jack but was able to borrow one from the ship yard. He returned to his car and while changing the tire, sustained the injuries for which compensation is sought.



Levengood in seeking to change the tire embarked on a personal venture for his sole benefit and in so doing terminated the relationship of employer and employee and was on his own. Even though Levengood may have been cloaked with the protective covering of the Workman's Compensation Act while enroute to his car through the parking lot, if, at the time of the accident, the necessary relationship did not exist, the benefits of the statute cannot be extended. The accident was deemed not to have arisen out of or during his employment. There was no recovery.

Levengood vs. N. Y. Shipbuilding Corporation

N. J. Department of Labor, June 29th, 1946

43 At. Rep. 2nd series, page 570.

Employee Struck On Street Leading From Shop During Working Hours.

WILLIAM GREENFIELD was employed as a lathe operator in the so-called car shop of a railroad company. There were several other men in his crew doing the same type of work all of whom worked in a building on the northerly side of Lake street.

On the date of the accident, Greenfield reported for work at three minutes after eleven p. m. Sometime

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CENTRI MERGE
DUST and FUME
Eliminator
AUTOMATICALLY
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—at point of origination.
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Like a huge octopus, with its tentacles (ducts) reaching out to every working area where contamination of air occurs, the Schmieg CENTRI-MERGE Eliminator sucks up and consumes all dangerous dust and fumes—literally eats them up.
Picked up at the point of origination—BEFORE any damage can be done—dust and fumes ride an air stream through the ducts to the Collection Unit. Here CENTRI-MERGE goes into action—washing—scrubbing—pounding out the dust and dirt in a tornado of cleansing water—depositing residue in a sludge tank at base of Unit.
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THE best AIR PURGE is CENTRI MERGE
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later, the foreman called at the place where Greenfield was working at his lathe in the car shop on the southerly side of Lake street. At the time, the lathe was running perfectly. In the building where Greenfield worked there was a toilet available for his use and near his lathe was a telephone available to him. There was also a convenient bench where he could sit

down to eat his lunch. There was no reason why it would be necessary for Greenfield to leave the car shop on the night in question for any purpose in connection with his work before the shift was completed.

About one hour after reporting for work, Greenfield was found unconscious on Lake Street. He was taken to the hospital, where he died soon after without regaining consciousness. The inference drawn is that he was struck by an automobile while engaged in an errand connected with his employment.

To make the inference, however, is to indulge in mere speculation. There is nothing in the record to disclose that the accident arose out of the decedent's employment. The burden of proof is upon the claimant to show that her husband's death was caused by a compensable injury. In the absence thereof, recovery is disallowed.

Greenfield vs. Vt. Ry. Co.
Supreme Court of Vermont, 5-7-46
48 At. Rep. 2nd series, page 854.

Presumption That Employee Fell Out Of Train Where Suicide Was Not Indicated

OLDHAM was employed by the Union News Company for several years as a vendor of soft drinks, candies, fruits, etc., on passenger trains of the N. C. & St. L. Railway.

On the morning of the 15th of June, a passenger occupying a seat in the fifth car came to the rear vestibule of that car to get a soft drink. He found Oldham asleep. He awakened him, and as Oldham

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BOTTOMS THAT ARE TOPS IN SAFETY

arose and started into the sixth car, the passenger stepped to the door of the train opposite the position in which Oldham had been sleeping and looked out. He waited and when Oldham did not return he walked to the front vestibule of the sixth car and found the door on the right hand side of the train, opposite the position of the soft drink cooler open. He pulled the emergency cord and stopped the train. Oldham was found dead alongside the tracks.

No one knows how Oldham met his death, the passenger stated.

The conclusion reached was that in the absence of any absolute testimony as to how the vendor met his death, it was concluded that the death was an accident resulting from a fall from the train. The accident arose out of and in the course of his employment. The decedent met his death through no desire on his part to destroy himself or with the intention of committing suicide. Claim allowed.

Union News Company vs. Oldham
Court of Appeals of Georgia,
September 5, 1946
39 S. E. 2nd series, page 318.

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If skin irritations are a problem in your plant let us send you a trial quantity of Tarbonis. In literally hundreds of plants Tarbonis has proved a real help not only in overcoming skin irritations that have occurred, but also in guarding against their recurrence. Pleasant to use—easy to apply—sure of workers' cooperation. Does not interfere with the work to be done. Use the coupon . . . now.

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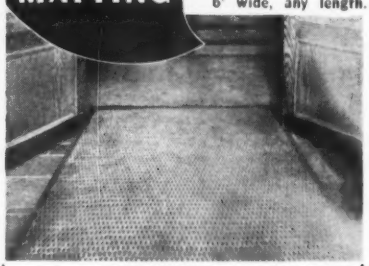

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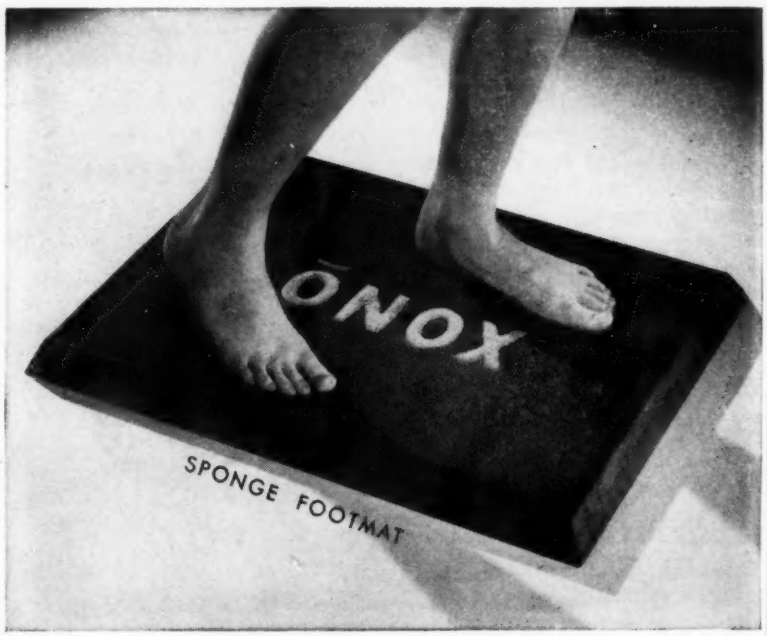
Traveling Employee Injured

RICHARD JANDA was employed by Lockheed since 1940 as a material conservation analyst whose duty it was to check materials for reclamation. In the discharge of his duty it was required that he travel between his general headquarters at Plant 2 in Los Angeles and Plant 4 in Maywood.

On January 25, 1945, Janda completed an errand at Plant 4 in Maywood and shortly before 8 o'clock he started back to Plant 2 on his motorcycle. He decided to get his lunch, turned and was hit by a car.

The rule is that the injury is compensable if received while the employee is doing those reasonable things which his contract of employment expressly or impliedly authorizes him to do. The come-and-go rule relied upon by Lockheed for recovery was found not to be applicable. An award was granted.

Lockheed Aircraft Corporation et al vs. Industrial Accident Commission.
Supreme Court of Cal. 9-23-46
172 Pacific Rep. 2nd series, page 1



Horse sense about **ATHLETE'S FOOT**

TIME Magazine calls foot baths *futile.* Some 91 skin specialists call them *illogical and potentially harmful to the skin.**

That's why Onox and the Onox sponge footmat were developed. Onox *steps up* resistance instead of *breaking it down.* It toughens the skin and helps counteract the softening effect of wearing shoes. Yet it is non poisonous and completely harmless to the skin.

Onox makes the skin unsuitable soil for the growth of the athlete's foot fungus. Here you have the *logical* answer to the athlete's foot problem. You solve the *problem* by removing the *cause.*

Bathers *like* Onox. It brings instant relief to burning feet.

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We will ship prepaid, your trial order for Onox and equipment. Use it for 60 days. If at the end of that time you are not completely satisfied (100%) you owe us nothing. For full details of the revolutionary Onox method now used by thousands of industrial plants from coast to coast, write

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No. 1032 Rubber Surface Work Suit is medium weight and waterproof, particularly suited for men who work under wet or muddy conditions. No. 1043 Parka Suit affords warm head to toe protection against foul weather. Ideal for airport personnel, truckmen, railroadmen and others.

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No. 7100 is a strong, black industrial apron which resists dilute acids and abrasion.

No. 7110 apron is made especially for acid protection.

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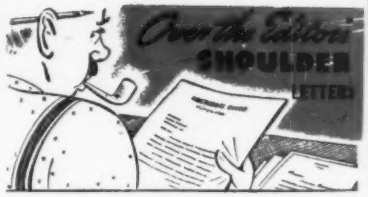

Solvent "Best-Seller"

OCCUPATIONAL HAZARDS:

Your article in the October issue on "Do You Know Your Trade Name Solvents?" attracted so much attention that someone removed it from my copy of the magazine.

Inasmuch as I had the pleasure of running some of the chemical analyses while connected with the Army Industrial Hygiene Laboratory, I would appreciate your sending me an additional two copies. — DeWitt Huffman, Safety Advisor, Industrial Commission of Ohio, Columbus.

With pleasure. We have taken care of scores of similar requests.— Ed.

Safe Oxy-Acetylene Practice

OCCUPATIONAL HAZARDS:

The article "Safe Oxy-Acetylene Practice at the Ford Motor Company, in the December issue looks good to us. Could we secure 12 reprint copies?—M. B. Monsen, Superintendent, Inspection & Safety, Northern States Power Co., Eau Claire, Wisconsin.

OCCUPATIONAL HAZARDS:

We would like to reprint the article "Safe Oxy-Acetylene Practice at the Ford Motor Company," which appeared in your December issue, for distribution to our assureds. Credit to OCCUPATIONAL HAZARDS would of course, be given. Our continuous educational program reaches several thousand aircraft owners, operators and pilots, and we will appreciate permission to use this splendid material.—Joseph M. Chase, Engineering Department, Aero Insurance Underwriters, New York City, N. Y.

OCCUPATIONAL HAZARDS:

Please send me copies of pages 35 & 36, Safe Oxy-Acetylene Practice at Ford Motor Company, or any additional information you have at hand on this subject will be appreciated.—E. M. Weber, Master Mechanic, Naval Ordnance Plant, York, Pa.

HI-SUDS
Prophylactic Cleaner
REMOVES GRIME
SAFELY
COMPLETELY

Shop grime clogs pores, irritates the skin. Ordinary toilet soaps can't remove it. Pastes containing harsh abrasives scratch the skin, may open the way for bacterial invasion.

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HI-SUDS prophylactic cleaner works safely, gently on the toughest shop grime—on cutting oil. A cream-colored powder, soft to the touch, HI-SUDS is adaptable to both shop and office use.

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Just a little HI-SUDS on hands first immersed in either hard or soft water can be worked up instantly into a rich, fluffy lather. As it's massaged into the skin, detergent and absorbent ingredients go to work on grime . . . a quick rinse and that's all there is to this modern, pleasant clean-up job!

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You buy HI-SUDS by the pound but it's used by volume—and it bulks big. DOLGE offers a choice of sturdy, attractive dispensers. See your Dolge Service Man and write for the booklet, "Stop Dermatitis."

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The ...onths ahead will require careful consideration of every means to widen the gap between factory cost and selling price. The safety apparel used by your workers should *invite* them to work faster. Safety is not enough. Comfort in wearing, freedom in use, lessened fatigue . . . these are the qualities to insist on, these are the qualities the Industrial Gloves Company has sought increasingly to manufacture into its Steel-Grip Protective Work Handlers. You may find exactly what you want in the extremely broad Steel-Grip line. Or Steel-Grip designers will work with you to produce it. Steel-Grip Protective Work Handlers are the product of 36 years' experience and offer you the utmost value at the lowest price. Write for a catalog today.

Standard Steel-Grip Finger Guard
No. 14314 — Designed for use on small punch press work, buffing, burring, grinding, inspection, etc. Tough flexible leather with elastic webbing back. Eliminates minor but costly finger injuries. Special quantity discounts.

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This sturdy reversible asbestos mitt is designed for roughest service. Entire wearing surface is "quilted" to patch of wool felt on inside of mitten, adding materially to wearing qualities. Wool lined

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Steel-reinforced, chrome leather gauntlet. Steel ribbons over extra tough strips of leather; steel stitched throughout.

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No. 13455—This new fingerless handguard, designed especially for bundlers in the paper industry, reduces handling hazards and permits faster, better, safer work. Made of toughest chrome leather with extra leather patch over palm. In pairs, or right or left hand only.

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OCCUPATIONAL HAZARDS:

We are interested in procuring, if available, two dozen reprints of the article "Safe Oxy-Acetylene Practice at the Ford Motor Co.", which appeared in the December 1946 issue of your magazine.—J. H. Carter, Personnel Manager, United States Gypsum Co., Plasterco, Va.

Your requests have been attended to.—Ed.

Carboblast

OCCUPATIONAL HAZARDS:

I should be most grateful to you if you would furnish some information as to the ingredients contained in a material called CARBOBLAST. All I know about the material is that it has recently been put to use in sandblasting operations as a safeguard against silicosis amongst workers. In addition, I would like to know the name of the manufacturer of CARBOBLAST.

I derive considerable information from your excellent OCCUPATIONAL HAZARDS magazine, which I am sure is a valuable promoter of safeguarding throughout industry in Canada and the States.—C. M. Oakes, M. D., Mount Royal, Quebec, Canada.

Our investigation discloses that Carboblast, unlike plain powdered aluminum, has not yet been sufficiently tested for its value as a substitute for personal protective equipment and exhaust systems in sand blast rooms. Manufactured by Turco Products Co., Los Angeles, it is a ground walnut shell abrasive to be added to sand.—Ed.

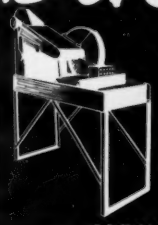
Pickling Operations Hazards

OCCUPATIONAL HAZARDS:

We are interested in obtaining literature regarding occupational hazards in the use of sodium cyanide for pickling operations. We are particularly interested in knowing the effect of hydro-cyanic gas on the human body, whether the effect is cumulative or not.—C. J. Kleinhans, Ceramic Engineer, Porcelain Metals Corporation, Louisville, Kentucky.

We are forwarding you the latest available literature dealing with the subject.—Ed.

PREVENT DANGEROUS
DUST!



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"VICTORY"
SAFETY CAPS

COVER ALL
THE HAIR
ALL THE
TIME!

Style No. 51/GN

There is no Cramming or Jamming the hair in "VICTORY" SAFETY CAPS. Hair automatically positions itself in the wide SNOOD back. Hair that is forced in will force itself out again. "VICTORY" Caps do it the Easy way.

Style shown is the Cool, Light weight Mesh in Blue, Brown or White. Other styles in Solid materials for dusty areas or in combination Solid materials and Mesh.

All "Victory" Caps are washable for longer service, adjustable to all head sizes.

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Gloves: Industrial Work Gloves of all kinds. Welders', all leather-reinforced as you want them. Leather palms, with canvas backs, knit wrist, long or short gauntlets. Leather APRONS — ANY SIZE.

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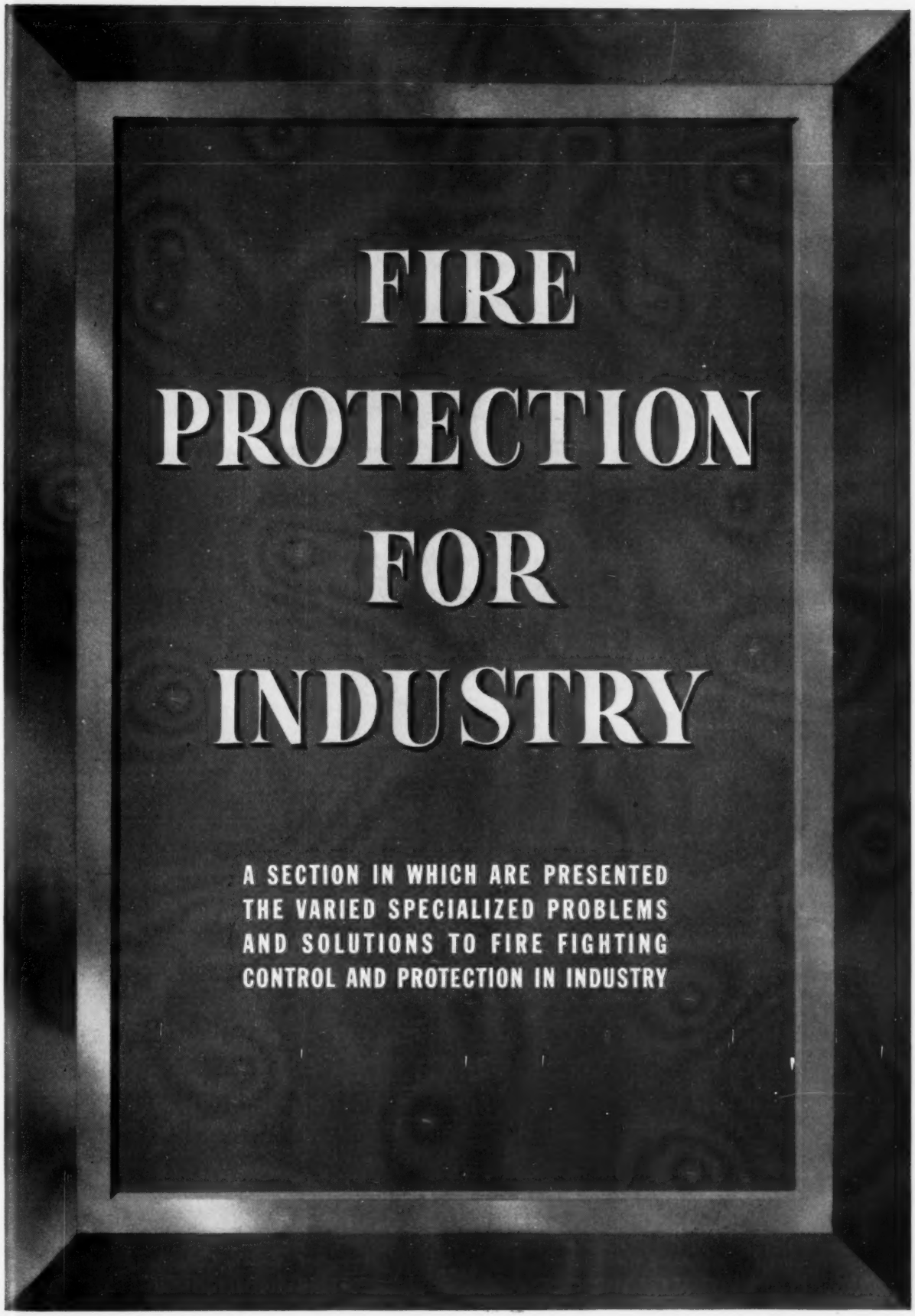
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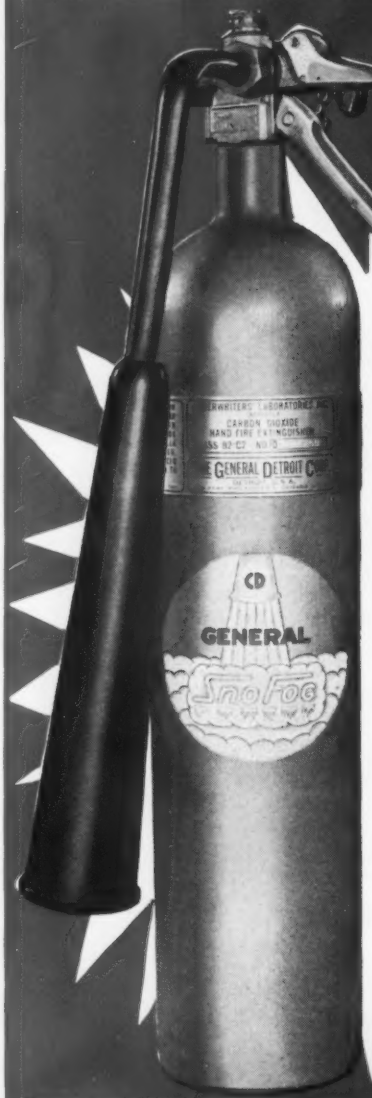

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A New Addition to GENERAL'S Line of CD-SnoFog Carbon Dioxide Extinguishers

GENERAL'S new 5-lb. CD-SnoFog carbon dioxide extinguisher costs no more than the 4-lb. size—yet gives you 25% more fire protection. This makes GENERAL CD-SnoFog the best buy in the fire extinguisher market—best for protection; best for economy.

The new 5-lb. GENERAL CD-SnoFog fits the standard 4-lb. wall bracket. Improved design of the shell makes it unusually light and easy to handle, with no sacrifice of structural strength.

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Another new CD-SnoFog—2½-lb. size—gives 25% more fire protection than the 2-lb. size, yet costs the same. It is light, strong, and easy to handle, due to improved shell design—an outstanding value. See the yellow section of your local telephone directory for your nearest GENERAL dealer. Ask him to show you both these new CD-SnoFog extinguishers, or write for complete details.

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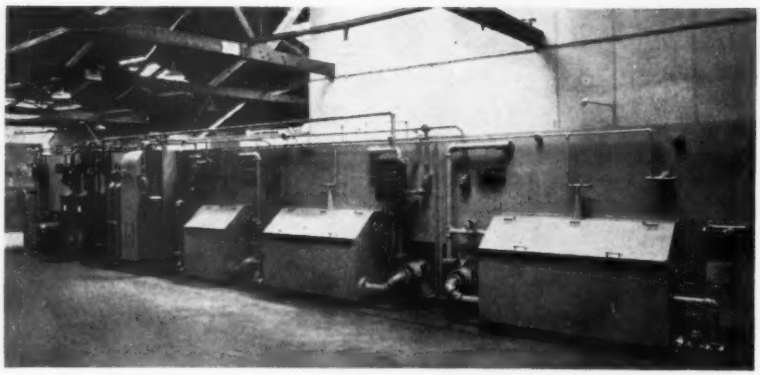
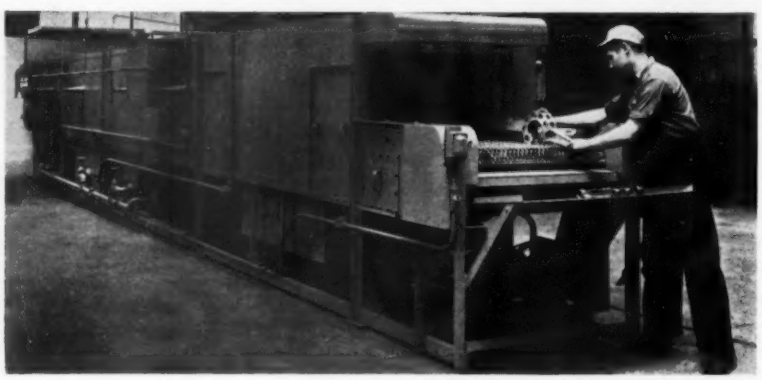
THE INDUSTRIAL FIRE PICTURE OF THE MONTH

Magnesium fires make a spectacular display when they get out of hand as this one did in a large mid-western smelting plant. But they are probably the worst kind to try to extinguish even in the embryo stage. A few magnesium alloy shavings can be ignited during machining and smolder for hours despite efficient sand and shovel work. In the above fire, no one was hurt, but that was only because of excellent footwork displayed by the workers. They fought the fast spread until the sparks flew high and then dropped their shovels and ran for it. The plant was demolished despite the turnout of 17 companies. Water is needed in torrents, and acts merely as a cooling agent. The solution for magnesium handlers is to stop the fire before it starts, keeping their processes cool and their talc powder dry.

FIRE-SAFING DEGREASERS WITH CARBON DIOXIDE

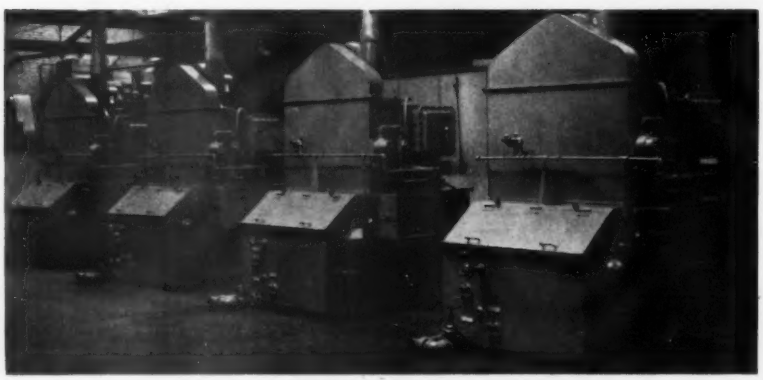


Carbon dioxide cylinders supplying fire protection to this huge degreaser can be seen at the left of the unit, mounted at floor level to the sides of the washer. Piping runs to cone-shaped nozzles seen along the sides at intervals which smother flames inside with the gas as it expands to 450 times the storage volume upon activation. (Walter Kidde & Co. Photo)



Looking into a degreaser with a mesh conveyor on which parts are placed for two baths and a rinse. Five carbon dioxide nozzles of a cone shape can be seen at left to the far end, perpendicular to the sides. (Kidde Photo)

An example of how smaller degreasers can each have individual steel cylinders of carbon dioxide for smothering interior fires. The piping leads to nozzles which spray key chambers upon the outbreak of flames. (Kidde Photo)



Industry's "washing machines" — those giant automatic degreasers — need automatic fire protection of the highest dependability.

IN THE removal of grease and oil, lapping and drawing compounds, drying of parts and even rust-proofing, industry solved a tremendous wash problem by the installation of self-contained units which automatically wash, slush, rinse and dry machine parts and equipment in speedy fashion. However, each of these installations meant the increase of a fire hazard to the plant as flammable liquid solvents generally provided the cleaning agent for the degreasing processes.

Unlike other fire hazards, these degreasers require special fire-preventive measures. The fire-control system must be built into the units in such a way that flames will be extinguished at once with little harm to the contents. Besides safeguarding the plant and its employees, the control system must guarantee a quick return to production tempo, with a minimum fire loss.

One of the control systems that most nearly fits these requirements is a built-in carbon dioxide system. Fire-fighting equipment experts have designed and built such systems to fit the dimensions and type of individuals degreasers under high pressure.

These systems operate similarly in all cases in that they permit the rapid discharge upon activation of a great volume of carbon dioxide for the exhaustion of all oxygen surrounding the flames until combustion can no longer be supported. Upon succeeding ventilation of the solvent tank, the carbon dioxide mist disappears without the damage attendant upon the use of water systems.

(*Turn to Page* 45)

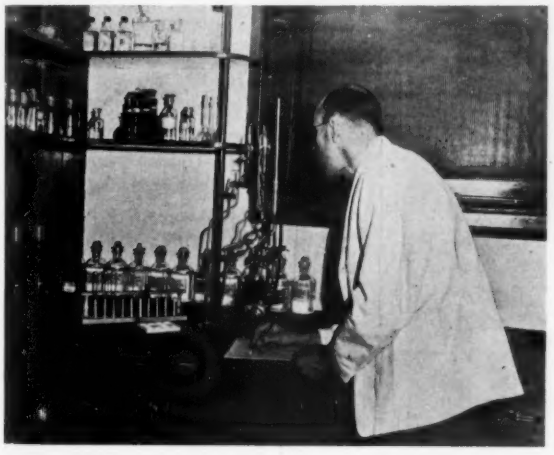
"Wetter" Water EXTINGUISHES FIRES QUICKER

By N. J. THOMPSON
Director, Factory Mutual Laboratories

PART II

A WETTING agent which would be quite satisfactory made up into a solution with ordinary city water might not be of any value as an ingredient in the solution of a soda-acid extinguisher. At the same time, even though the wetting effectiveness is retained, the wetting agent might have an adverse effect over a period of time upon the sodium bicarbonate constituent of the extinguisher solution.

There are probably over 100 concerns actively interested in the development and production of commercial wetting agents; and there must be at least 400 or 500 different agents available. Some of the most effective modern wetting agents are sulphates or sulfonates of alcohols, coal tar or petroleum derivates, or of combinations of these. It is very common to find the sodium salt of a combined sulfonate.



Wetting agent compounds have been tested by the Factory Mutual Laboratories, at least in a preliminary manner, to determine their relative effectiveness as compared with water on fires in ordinary combustible materials. For a tentative standard test, we built up a structure in the form of a crib of multitiered Douglas fir 2 x 4's closely spaced and with the 2 x 4's in adjacent tiers at right angles to each other. The overall dimensions of the crib were finally set at 2 ft. square and 18 in. high.

According to the test procedure, a fire was started by gasoline held on an absorbent fiber underneath and the fire allowed to spread and develop so as to produce deep charring in the structure as a whole, the required time for which was approximately 10 to 12 minutes. The water or water solution of wetting agent was then applied from a small overhead spray nozzle at a fixed pressure to give an average discharge rate onto the crib approximating one-quarter of a gallon per square foot per minute. The comparative effectiveness of the extinguishing agent was then evaluated by the total time required to extinguish definitely all glowing combustion.

A reduction in extinguishing time by the use of wetting agent was extended with more concentrated wetting agent solution. While results vary from one agent to another and with the concentration used, a typical test result from a good modern wetting agent shows a reduction in extinguishing time in the approximate ratio of 3 to 1, using 98 parts of water and 2 per cent parts by volume of a concentrated wetting agent solution, which is equivalent to a final solution containing only .4 of 1 per cent of solid wetting agent. The cost of the chemical used in this example was approximately $2.50 per 100 gallons of treated water.

In another series of tests plain water penetrated loose cotton batting at the rate of only half an inch per hour whereas a relatively weak (1 per cent) solution of a wetting agent showed a penetration of 250 inches per hour. Tests on raw cotton compressed to 20 lbs. per cu. ft., such as in a cotton bale, showed practically no penetration beyond the surface in several hours with plain water whereas a 1 per cent solution of a wetting agent showed almost a quarter of an inch per hour—indicating for any practical application, a better or more concentrated wetting agent would be needed or means devised to apply the solution to the bale under pressure.

> A class of fire which is extremely difficult to cope with is a fire in a large coal pile. Fires in wooden construction are generally easy to extinguish on the surface, but because of the slow penetration of water through charred wood, every fireman knows that these may break out again if not carefully watched for some period of time. In such cases, the application of water with a superior wetting agent should be of value.

Tests have also been made on flammable liquids, such as kerosene, gasoline, and benzol. All of these tests were made with commercial spray nozzles. For kerosene, for example, we were able to extinguish a fire with a 2 per cent solution of wetting agent at 40 lbs. per. sq. inch pressure on the spray nozzle, and in less than half of the time than was required at 80 lbs. per square inch with plain water.

In the case of gasoline, there was an apparent im-

provement in the extinguishing ability of the water spray by the addition of wetting agents, but under the conditions of the tests, the fire was not extinguished until after some of the lighter fractions of the gasoline burned off.

The benzol fires could not be extinguished by a certain nozzle with plain water at any pressure up to 100 lbs. per square inch, but with the addition of a 12 per cent solution of a wetting agent, a scummy froth was finally built up on the surface of the benzol so that the fire was ultimately extinguished. These results with flammable liquids, while incomplete, show considerable promise, and further work with other wetting agents or at higher concentrations is contemplated.

To evaluate fully the usefulness of a wetting agent for fire extinguishing purposes, there are characteristics other than penetration and extinguishing ability which must be carefully considered in arriving at a final conclusion. It is important to determine to what extent the electrical conductivity of water may be increased—particularly if the treated water may subsequently be used on live electrical equipment. The conductivity may be sufficient to prevent close approach with apparatus using solid streams.

Furthermore, if a wetting agent is used on an outdoor insulator in a high voltage circuit, it would be necessary to rinse this off completely to avoid subsequent passage of current through the continuous film of water which would result from condensation of moisture in atmospheric temperature reduction or in a mist or fog. This condition would be more objectionable if wetting agents should be moderately hydroscopic.

One of the most annoying of small fires, particularly objectionable on account of the acrid smoke, is a fire in a cotton-filled mattress, which cannot be extinguished quickly, except by pulling the mattress apart and soaking it with a forecful application of large quantities of water.

Fires in dry and dusty humus such as is encountered in forest fires, or even grass fires, are difficult to extinguish completely with plain water; and the water must be hauled for long distances.

Decreases Surface Tension

An effective wetting agent brings about a marked decrease in surface tension. Much smaller sized droplets are more readily formed when the liquid issues from an orifice. For the same reason the discharge from a spray nozzle should have a greater number of small drops when a wetting agent is used than with plain water, or an equally fine break-up could be produced at lower nozzle pressure. This might be a factor in a superior action in extinguishing flammable liquid fire. The lower the surface tension of a liquid, the more difficult it would be to maintain a solid stream from a hose nozzle without objectionable spraying; and in turn the range of the stream might be reduced.

Some tests which we have already made, however, indicate that this reduction in stream range would not be serious at effective wetting agent concentrations.

The possible effect in the acceleration of corrosion in containers or other fire extinguishing equipment should be considered, although the industry claims that effective compounds are available which do not exhibit these objectionable tendencies.

PREVENT FIRES
-PROTECT LIVES
and REDUCE OPERATING COSTS
Protect your property, and your profits from fire and explosion hazards with PROTECTOSEAL equipment . . . engineered to stop fires before they start. Designed to speed-up production where flammable liquids are required. . . . approved to gain insurance rate reductions. Let an experienced PROTECTOSEAL consultant point the way to greater safety in your plant. There is no charge for this service.
Write for catalog covering entire line of PROTECTOSEAL equipment—combat the ever-present dangers of fire and explosion.
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OILY WASTE CAN . . . new improved design developed to meet and exceed safety and service requirements. U.L. and F.M. approved.
THE PROTECTOSEAL CO., 1970 S. WESTERN AVE., CHICAGO 8, ILL.

DEGREASERS

(*Continued from Page 42*)

Users of the CO_2 installations include the Industrial Washing Machine Corporation and the Detrex Corporation, both in the automatic washing machine business. As makers of all types of units, conveyor, cabinet monorail, rotary drum, vertical and teardown, they include the built-in automatic carbon dioxide control system of fire protection in each unit, in a size to fit individual requirements.

The design is simple, the operation dependable. To illustrate, let's assume we are dealing with a large teardown washer similiar to that used in practically every aircraft engine or engine parts plant in the United States. Three tanks of varsol or kerosene supply the solvent for the degreasing process, which includes two washes, a rinse, a cold and a hot blowoff. Parts are carried on a wire mesh conveyor.

Carbon Dioxide Supply

Two 75-pound steel cylinders of carbon dioxide mounted on the side of the washer, carry supplies of the gas compressed to 850 pounds per square inch at a temperature of 90° F. Heat actuators are installed in the hood of the washer to set off the system at the first sign of fire. Above each cleaning section, as well as at the air washer and spray eliminator chambers, shielded nozzles smother out the flames with gushes of the expanded carbon dioxide. Vents in the machine and exhaust duct louvres close simultaneously with the operation of the system, and a pressure-operated switch clicks off fan and pump motors.

In the event of a special need for manual operation of the fire-protection system, employees merely turn a control handle on the cylinders.

Cylinders can be weighed and recharged when use shows a loss of 10% or more of the contents by weight. No electrical or water power is required for the operation of the system, which makes it an independent as well as dependable unit. With its use another potential plant-wrecker can be checked off the danger list.

Now—an extinguisher with ALL FIVE fire-fighting essentials!

1. EASE
One-hand operation, from bracket to fire. Randolph "4" means panic-proof protection
2. SPEED
Tests prove Randolph "10" stops 2-gallon gasoline fire in 10 seconds
3. SAFETY
Randolph CO_2 will not conduct electricity. And it's non-toxic . . . no poisonous fumes
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No mess or stain . . . no water or chemical damage with Randolph CO_2
5. EFFICIENCY
Randolph is ready for action under all temperatures. No freezing or deterioration
Randolph 4
TO OPERATE
1
2
3

ONLY RANDOLPH gives you this multiple protection

Lacking any one of these fire-fighting essentials, your extinguishers cannot give you full protection. They may actually increase fire-damage in several ways:

For example, a water-filled extinguisher played on an electrical fire may bring serious electrical shock to the employee using the unit. Again, a complicated, cumbersome extinguisher often confuses and panics the operator . . . causes fatal delay during those first few important moments.

Only in a Randolph do you get the complete all-five combination of fire-fighting essentials. Patented trigger-touch affords ONE-HAND action for ease and speed. Dry, odorless carbon dioxide works with split-second speed, disappears with the fire, will not freeze in cold weather. *Approved by Underwriters' Laboratories.*

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Analyze your fire protection needs with this compact slide-rule data guide.

NAME_____
FIRM_____
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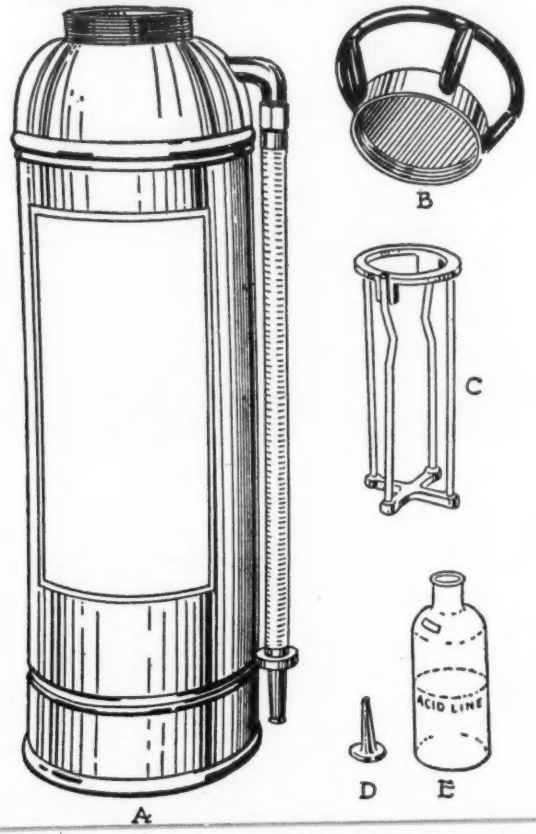
CITY_____ STATE_____

CHEMICAL SOLUTION
(SODA-ACID)
EXTINGUISHERS
(1¼ - 1½ and 2½ Gallons)

WHERE adequate maintenance is provided for extinguishers, savings are effected that help accomplish the maximum of fire extinguishment in the minimum of time and cost. A careful extinguisher maintenance program should be organized. It should include periodic extinguisher unit inspections, regular scheduled recharging service, and records, dates and information on the inspections, discharges, recharging and materials used should be kept.

This handy chart summarizes the essential facts in maintenance of CHEMICAL SOLUTION (Soda-Acid) EXTINGUISHERS and furnishes a quick reference for inspection techniques. Modifications should be made of information contained herein to conform with individual manufacturers' instructions usually found on exterior of extinguisher.

What To Check	WHAT TO DO
(A) Extinguisher Body	Examine chamber thoroughly for any signs of deterioration. Wash and scrub inside of shell with clear water after each inspection preparatory to recharge. Recharging should be done under capable supervision. Sodium bicarbonate supplied by extinguisher manufacturer should be thoroughly dissolved in luke warm water outside of the extinguisher body in strict accordance with instructions on charging unit before refilling chamber to designated filling mark. Thread connections on ring top neck should be checked and cleaned of any accumulation of corrosion.
Hose Attachment & Nozzle	Examine hose and its connections for deterioration or injuries due to misuse or corrosion. Remove all soda-acid encrustments or stains caused by acid by scrubbing hose with clean water. Replace hose if cracked and not in useable condition. See that orfices of nozzle are not clogged by flushing a stream of clean water through hose and nozzle. Replace nozzle with new one if not in perfect working order.
(B) Ring Top or Cap	Check ring top threaded connections for wear or corrosion. Check gasket for secure seat Replace with new gasket if loose or worn by corrosion.
(C) Acid Bottle Cage	Check cage structure for rigidity or any weakness due to effects of corrosion. Before replacing wash with clean water to remove any encrustments. If cage is not in good condition it should be repaired or otherwise replaced with a new one of the same manufacture.
(D) Acid Bottle (E) Loose-Stopple	On recharging acid bottles, they should be replaced with exact duplicates of those originally provided with extinguisher, otherwise the discharge may be impaired or extinguisher rendered inoperative. If recharging old bottle it should be first washed clean and then filled to the 4 oz. mark line with guaranteed full strength sulfuric acid. Corresponding lead or porcelain acid bottle stopples should be replaced.



The soda-acid type extinguisher consists of a quenching agent which is principally water with the products of a chemical reaction in solution. The most common type employs a solution of sodium bicarbonate in the main chamber which also holds a suspended acid bottle. When extinguisher is inverted the acid and soda mix and react, forming carbon dioxide gas, which serves as a pressure means for discharging the solution through the hose and nozzle and in a continuous easily directed stream.

WHEN	WHY
Each Month	This type extinguisher is usually hung on hangers or set on brackets not more than 5 feet above floor for easy accessibility. A routine check at monthly intervals will make certain that each extinguisher has not been tampered with or removed from its designated place.
Several Times A Year	At company prescribed intervals a general inspection should be made to detect any injuries to the extinguisher; to see that they are not empty or that the nozzle orfice is not clogged. Check for proper tagging, date and signature of last recharger to assure proper record of maintenance. Check location and supply of powdered and liquid chemical charges for on-the-spot recharging if extinguishers are found empty. Instructions to employees should be given in order that through familiarity they may become adept at handling the extinguisher in event of fire. These instructions should be supplemented with frequent demonstrations.
At Least Once a Year	All soda-acid extinguishers must be recharged at least once a year or after each use in order to provide new extinguishing pressure for subsequent use. Before emptying and recharging, the extinguisher and all its parts should be examined (including gasket and hose) for signs of deterioration or injuries due to misuse, and the orfices of the hose nozzle examined to see that they are not clogged. Extinguishers or parts which are not in good condition should be replaced with those which will perform with maximum efficiency. It is important that acid bottles and their stopples when replaced should be exact duplicates of those originally provided, as otherwise the discharge may be impaired. At these annual inspections, all extinguishers should be emptied and recharged. Recharging should be done under capable supervision and date of recharging and signature of person performing operation recorded on tag attached to each extinguisher to indicate operable condition and furnish source of reference in case of investigation.

(Other handy bulletins covering first aid fire appliances will appear from time to time in the Fire Prevention for Industry Section. Watch for them. Clip and use for instant reference in your industrial fire prevention notebook.)

Air Tanks as Explosion Hazards

By L. L. BELL, Safety Engineer, California Division of Industrial Safety

Many operators of air compressors and receivers seem to have the opinion that while steam boilers have an operating hazard, that air tanks are relatively harmless. Such operators are not fully aware of the hazards involved.

MANY air compressors are automatically operated. As a result the operator pays but little attention to his air compressor and receiver. In fact, little is needed, if that attention is given at frequent and regular intervals.

The maintenance of an air receiver or tank involves two especially important items. First, draining the tank of liquids at regular intervals, and second, seeing that the safety valve lifts free from its seat. It should lift so as to relieve any pressure in the tank that is in excess of the working pressure as marked on the tank by the tank manufacturer.

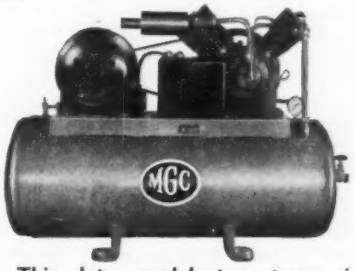
All air contains moisture, the saturation point of which is determined by the air temperature. When air is compressed the maximum moisture content is exceeded. This results in the surplus moisture settling as water in the bottom of the tank. The water in turn under pressure will absorb oxygen from the air. It is this oxygen solution that corrodes the inside bottom of all air tanks, and generally determines the life of the air tank.

Drain Regularly

It can be reasonably stated that if a tank is drained regularly every day, the corrosion factor is reduced considerably thus prolonging the life of the tank. On the other hand, air tanks that are not drained regularly and at frequent intervals, will corrode much sooner, thus decreasing the life of the tank.

When an inspection is made of an air tank one of the first things to be noted is the accessibility of the drain valve. If the operator has a readily accessible drain valve and a place to dispose of the water from the air tank, he generally will keep his tank drained properly. If the drain valve is inaccessible and no handy place to dispose of the drainage is provided or if the tank is surrounded with oil cans, tires, boxes or other miscellaneous junk, it is very unlikely that the tank will be drained regularly.

The operator will generally cooperate when it is explained to him that installing a proper and convenient drain valve and piping system will make the unit safer to operate and will prolong the life of his tank.



This late model two-stage air compressor with an 80 gallon storage tank is of the self contained type and is controlled by centrifugal type unloading valves which guarantee against motor burn-out. In addition, a fan type flywheel causes circulation of air past a copper finned intercooler, cooling the air as it passes from the low pressure cylinder to the high pressure cylinder, thus minimizing the collection of carbon in the valves and eliminating valve sticking.

As to the safety valve, many operators overlook testing the manual lifter for raising the valve free from its seat. Compressor lubricating oil is in vapor form in the tank with the compressed air, especially as the compressor gets older. Some of this oil vapor condenses on the safety valve seat and hardens there, sticking the valve to the seat, so that the valve does not open at the desired pressure.

Many operators conclude that because the automatic switch takes care of the tank pressure and the safety valve has never popped off, that it is of no special importance.

There are other operators who desire higher air pressure than the tank is made for and to do this they adjust upward the operating pressures of the automatic switch. This starts the safety valve either to pop or leak. To overcome this last difficulty they break the seal on the safety valve and screw down the valve spring. This stops the valve from popping or leaking, but prevents its action as a safety valve.

The tremendous power unleashed by an air tank explosion is best understood by those who have experienced or witnessed the results of such an occurrence. There is always considerable property damage and frequently loss of life.

Watch Working Pressures

A service station was owned and operated by a man who had an air tank designed for a working pressure of 150 pounds per square inch. An electrician advised him erroneously that his 150 pounds per square inch working pressure tank had been tested by the tank manufacturer to 300 pounds, therefore his tank was good for a working pessure of 300 pounds per square inch. When he was advised to reduce the presure to 150 pounds per square inch following a routine check-up by a certified inspector, in accordance with the State law which requires that all pressure tanks must be inspected at least once every two years, he was very much surprised. The difference between working and testing pressures was correctly explained to the operator, and when he realized the hazard involved, he immediately converted the working pressure back to 150 pounds per square inch.

The established safe working pressure of an air tank should never be tampered with by an unauthorized person.

(Other handy bulletins covering first aid fire appliances will appear from time to time in the Fire Prevention for Industry Section. Watch for them. Clip and use for instant reference in your industrial fire prevention notebook.)

For further information on any of these products, simply list the key number at the foot of each item on the special post card enclosed with this issue.

SAFETY STEEL STAMP—An entirely new safety steel stamp, designated as "Nu-Grip," is announced by the M. E. Cunningham Co., Pittsburgh. The stamp is made of safety steel and incorporates all the advantages of safe, positive grip at a more economical cost.

"Nu-Grip" stamps feature a countersunk hole on all four sides. The design of the hole has been engineered, to assure the operator of a positive grip, and a "feel of security" when stamps are struck by the severest hammer blows. **NP 96**

SPEED-SHIFT GOGGLE—A new speed-shift goggle mounted on a plastic headgear has been developed by the Chicago Eye Shield Company. It is designed for welders, who have to constantly shift goggles from eyes to forehead in layout and inspection work. With the new Cesco Speed-Shift, the welder pulls the goggles slightly forward, then releases them on the forehead, the whole process taking a matter of seconds. **NP 97**

FOG-PROOFING AGENT — Three new products for cleaning and fog-proofing eyeglasses, lenses, face shields, and windshields have recently been introduced by Clearsite Laboratories, Pittsburgh. Clearsite No. 100 for eyeglasses, Clearsite No. 200 for gasmasks and face shields, and Clearsite No. 300 for automobile windshields are claimed to eliminate cleansing stations and old methods involving pastes, sticks and liquids as fog-proofing agents. **NP 98**

DRY CHEMICAL UNIT — Increased fire-stopping power is one of the many advantages claimed for the new Ansul-Dugas dry chemical fire extingiushers announced recently by the Fire Extinguisher Division of Ansul Chemical Company, Marinette, Wisconsin.

Other important features claimed are: simplified and faster operation, quicker and easier on-the-spot recharge, greater heat-shielding protection for the operator, expert extinguishing by inexperienced operators and greater capacity without increased weight. The extinguishers are listed and approved by the Underwriters' Laboratories and Factory Mutual Laboratories. **NP 99**

FOAM-MAKING NOZZLE — The Foamite Airfoam-Generating Nozzle is a foam-making, fire-fighting nozzle, only 2½ in. in diameter at the widest part of the barrel. It is made by American - LaFrance - Foamite Corporation of Elmira, N. Y.

A dual-purpose nozzle with patent pending, it can be operated for either a foam stream, or clear water stream at the option of the operator by simply removing the pick-up tube from the foam liquid. **NP 100**

SAFETY BELT—Manufacture of a new type Strauss lineman's safety belt, incorporating both web and leather construction, is now being produced by the Portable Safety Di-

vision of Portable Products Company, Pittsburgh. The new belt is made of web strap 1¾" wide and 5/32" thick, with a tensile strength of 4500 lbs. Inside this strap is fitted a 4" wide web body pad which in turn is lined with leather.

Rivet burrs are positioned to avoid contact with the wearer's body. **NP 101**

PERSONAL PROTECTIVE EQUIPMENT—20 new products have been added to the line of the American Optical Co. New goggles include a Duraweld goggle for welders, a Duralite goggle for protection against flying objects, a chemical goggle, a dust goggle, and a fits-on goggle for protecting spectacle goggle lenses against pitting or scratching.

Other items are various types of work gloves, mittens, leather sleevelets, and spats. **NP102**

SCREENING NOZZLE—Screening nozzles, designed to cut off or "screen" a fire's oxygen supply, are available for use with standard carbon dioxide fire extinguishing systems manufactured by Walter Kidde & Co., Inc., Belleville, N. J. **NP 103**

TYPHOON SUIT — Announced by the B. F. Goodrich Company, Akron, is a lightweight "Typhoon Suit" made with its Ameripol synthetic rubber for a wide variety of industrial uses. Made with a hooded parka and overall pants, the "Typhoon Suit" is said to be impervious to water, acid and alkali and resistant to gasoline, fish oil and other oils and greases. **NP 104**

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THAN DRAWIN' SODA THRU A STRAW!

BREATHING with a Scott Demand-Type Respirator is literally just that—simple and comfortable.

The air is there—gentle, refreshing—every time you inhale. No nerve-wearing miniature hurricane in your face from continuous air flow.

Many companies after only a "preview" trial are replacing cannister masks and discarding continuous flow respirators for the ***new*** Scott Demand Respirator because the use of the Scott Demand-Type Respirator accomplishes three important results:

Breathe Freely
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DUSTY—OBJECTIONABLE
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- ✔ DEFINITELY ***INCREASES*** WORKER MORALE
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Here's a statement from an actual user, which tells the whole story—

"As comfortable for 8 hours as for 8 minutes"

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FOR SAFETY—FOR SERVICE

"THERE CAN BE NO COMPROMISE WITH QUALITY WHEN A LIFE IS AT STAKE"

*** OCCIE HAZZ Says:**

"BIG SPENDING DAYS ARE OVER!"

Now things must last! "Maintenance" is the big watchword. That's why our Good Housekeeping issue in April is going to be more important to you than ever before. This 12th annual issue is important for other reasons, too. It's the first Good Housekeeping issue in our *new larger size magazine* and the first under our *new expanded editorial policy*. Plenty of easy-to-read features and articles aimed to improve cellar-to-roof sanitation and maintenance conditions at your plant . . . plus a liberal sprinkling of new ideas on how to eliminate plant disorder at the source.

* Our cracker-barrel expert.

HERE ARE A FEW OF THE FEATURES:

INSPECT OR SUSPECT . . .

Here's one for safety directors with "gumshoe" tendencies. If you're suspicious of existing hazards you'll track 'em down.

RATS MOVE OUT . . . WHEN GOOD HOUSEKEEPING MOVES IN . . .

Experience shows that good housekeeping is the most effective form of "insurance" against rats . . . This article certainly proves it.

SIX LOCKER ROOM "MUSTS" FOR ATHLETE'S FOOT CONTROL . . .

A sanitation story dealing with eliminating the bogey of athlete's foot infection in the plant locker room.

THE RIGHT FLOOR MEANS EASY MAINTENANCE . . .

There's profit in prevention—or open sesame to savings—We maintain that there are plenty of economies effected by selecting the right floor materials.

And . . . . . .

Many other timely features and regular department stories to keep you posted on what to look for to help your Good Housekeeping program along. "PLANT HOUSEKEEPING—A FULL TIME JOB," "GOOD PLANT HEALTH IS JUST PLAIN GOOD MANAGEMENT," "GOOD 'LIGHT' HOUSEKEEPING," "AND SUDDEN INJURY," etc.

WITH A FIRE PROTECTION IN INDUSTRY SECTION devoted exclusively to the idea that a clean place won't burn.

Readers of OCCUPATIONAL HAZARDS look forward to this annual issue as an authority on plant maintenance. It's passed all around the plant to each person interested in GOOD HOUSEKEEPING. LOOK FOR IT!

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